57TH CONGRESS, 1st Session. | SENATE. | DOCUMENT No. 269.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

LETTER FROM THE SURGEON-GENERAL OF THE MARINE-HOSPITAL SERVICE PRESENTING A REPORT RELATING TO THE ORIGIN AND PREVALENCE OF LEPROSY IN THE UNITED STATES.

MARCH 24, 1902.—Referred to the Committee on Public Health and National Quarantine and ordered to be printed.

WASHINGTON:
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LETTERS OF TRANSMITTAL.

TREASURY DEPARTMENT,
Washington, March 21, 1902.

SIR: I have the honor to transmit herewith a letter from the Surgeon-General of the Marine-Hospital Service, presenting a report of a Commission of medical officers appointed under the act of Congress approved March 2, 1899, to investigate the origin and prevalence of leprosy in the United States and report upon what legislation is necessary for prevention of the spread of this disease.

Respectfully,

L. M. SHAW, *Secretary.*

The PRESIDENT OF THE SENATE.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, March 21, 1902.

SIR: In accordance with the act of Congress approved March 2, 1899, I transmit herewith a report of a commission of medical officers of the Marine-Hospital Service appointed to investigate the origin and prevalence of leprosy in the United States and report upon what legislation is necessary for prevention of the spread of this disease.

Respectfully,

WALTER WYMAN,
Supervising Surgeon-General M. H. S.

The SECRETARY OF THE TREASURY.

LEPROSY IN THE UNITED STATES.

REPORT OF THE COMMISSION OF MEDICAL OFFICERS OF THE MARINE-HOSPITAL SERVICE, APPOINTED BY THE SURGEON-GENERAL OF THE MARINE-HOSPITAL SERVICE, WITH THE APPROVAL OF THE SECRETARY OF THE TREASURY, TO INVESTIGATE THE ORIGIN AND PREVALENCE OF LEPROSY IN THE UNITED STATES, IN COMPLIANCE WITH AN ACT OF CONGRESS APPROVED MARCH 2, 1899.

Surg. J. H. White, M. H. S., Chairman; Surg. G. T. Vaughan, M. H. S.; P. A. Surg. M. J. Rosenau, M. H. S.

ORDER OF THE SURGEON-GENERAL, M. H. S., APPOINTING COMMISSION.

Treasury Department,
Office of the Supervising Surgeon-General M. H. S.,
Washington, December 15, 1899.

Sirs: You are hereby designated, under the provisions of the act of Congress relating to the investigation of leprosy in the United States, as a Commission to investigate the origin and prevalence of leprosy in the United States and to report upon what legislation is necessary for the prevention of the spread of this disease.

A report by the Sanitary Board, suggesting lines of investigation, is inclosed herewith, but the commission will determine its own method of procedure in connection with the investigation.

The commission is also authorized to nominate a clerk, if necessary, for the proper conduct of the correspondence.

Respectfully,

Walter Wyman,
Surpervising Surgeon-General, M. H. S.

Surg. J. H. White, P. A. Surg. G. T. Vaughan, and P. A. Surg. M. J. Rosenau,
U. S. Marine-Hospital Service, Washington, D. C.

Approved.

L. J. Gage, *Secretary.*

TREASURY DEPARTMENT,
MARINE-HOSPITAL SERVICE,
Washington, November 30, 1901.

SIR: Pursuant to the instructions contained in your order of December 15, 1899, designating us as members of a commission to investigate the origin and prevalence of leprosy in the United States, under an act of Congress approved March 2, 1899, as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Supervising Surgeon-General of the Marine-Hospital Service, under the direction of the Secretary of the Treasury, shall appoint a commission of medical officers of the Marine-Hospital Service to investigate the origin and prevalence of leprosy in the United States and report upon what legislation is necessary for the prevention of the spread of this disease; the expenses of this investigation, not exceeding the sum of five thousand dollars, to be paid from the fund for preventing the spread of epidemic diseases,

we have the honor to submit the accompanying report upon the number and location of the lepers found in the United States, together with the character of the disease in each case, so far as has been ascertained, and other data which we have been able to obtain on this subject.

Respectfully,

J. H. WHITE,
Surgeon, M. H. S., Chairman.
GEORGE T. VAUGHAN,
Surgeon, M. H. S.
M. J. ROSENAU,
Passed Assistant Surgeon, M. H. S., Recorder.

THE SURGEON-GENERAL MARINE-HOSPITAL SERVICE,
Washington, D. C.

ACKNOWLEDGMENTS.

We particularly wish to extend our thanks for much valuable information furnished, to Dr. H. M. Bracken, of St. Paul, Minn.; Dr. Isadore Dyer, of New Orleans, La.; Dr. C. J. Miller, of New Orleans, La.; Dr. D. W. Montgomery, of San Francisco, Cal.; Dr. A. W. Hitt, of New York, N. Y., and to the officers of the Marine-Hospital Service in general, and to Surg. R. D. Murray, stationed at Key West, Fla., and to Surg. Gen. Walter Wyman, in particular.

TREASURY DEPARTMENT,
MARINE-HOSPITAL SERVICE,
Washington, November 30, 1901.

SIR: Our investigations, in addition to some personal observations by the members of the commission, included a very full correspondence with each and every State and county health officer in the United States, and with prominent leprologists, dermatologists, etc. To many of these latter gentlemen we are indebted for most valuable informa-

tion and assistance, and embody in our report the writings of some of them, which we deem to be of special value in connection with the subject-matter of the report.

In order to give some idea of the extent of the correspondence which has been involved, we would state that, in addition to more than 10,000 formal letters, over 800 personal letters were addressed by your commission to leprologists, dermatologists, secretaries of boards of health, and State and county officials. More than 2,700 replies were received. Those parties who did not reply to the first letter were, after an interval, addressed a second time, and, after a further interval, a third time when no response had been received to the second invitation; so that in the case of counties which are marked "no report" in the subjoined list, three successive efforts were made to secure information respecting the existence or nonexistence of leprosy therein.

Of the 2,819 counties addressed, replies were received from 2,530, and 289 failed to make any report.

Your commission does not and can not in the nature of things claim to have ascertained the whereabouts of every case of leprosy in the United States. Many cases are no doubt so mild as to have escaped observation altogether, and many have been purposely hidden. Besides this, some persons who claim to have a knowledge of leprosy and of lepers in the United States have refused to give any information whatever to your Commission.

It is believed that the information which has been received from various sources, and which in some instances has been confirmed by the personal observation of the senior member of your Commission, is for the most part reliable, and it is a subject for congratulation that the number of cases discovered by your Commission within the limits of the United States is as small as it has been found to be. There are, however, a sufficient number of cases, and there are, in some localities, sufficient evidences of endemicity and of local spread of the disease, to justify the recommendations which we have the honor to submit.

Taking the reports as they occur, State by State, it would appear to your Commission that the number of cases reported from the States of New York and California, and from Florida, Louisiana, and some others of the Gulf States, is less than the actual number of cases therein.

Your Commission submits herewith, for convenience in examination of the records, tabulated statements, as follows:

Table No. 1.—A complete list of the cases of leprosy reported, giving in each instance, where the information has been furnished, the sex, age, nativity, where disease was probably contracted, whether patient is isolated or at large, and the variety of the disease. Names are omitted.

Table No. 2.—An alphabetical list of States and Territories of the United States (arranged alphabetically by counties), in the case of each

county stating whether or not leprosy exists therein, giving the number of cases, where any, or in the case of no report having been received so stating.

Table No. 3.—A condensed summary of all cases of leprosy reported to your Commission, arranged alphabetically by States, giving the number of cases in each State, number of males and females, number of native and foreign born, number who probably contracted the disease in the United States, number who probably contracted the disease outside the United States, number isolated, number at large, and number suffering with the various types of the disease.

Table No. 4.—A statement of the different nationalities represented in the cases of leprosy reported.

There are, as far as your Commission has been able to ascertain, 278 cases of leprosy in the United States. The members of your Commission know full well, however, that this is not a complete census of all the cases, and, from the difficulties encountered in collecting these, it is our belief that it is impossible to discover all the cases of leprosy in the United States at any one time. On account of the loathsome nature of the disease, which has clung to it from antiquity, there is an inclination on the part of the patient himself, as well as upon the part of his family and friends, to conceal the affliction from the public. This desire is heightened by the character of the pesthouses and prison-like leprosaria which at present exist in the United States, such places for the most part being unfit for either the treatment or comfort of their inmates.

Of the 278 cases, 145 were born in the United States, 120 in foreign countries, and the birthplaces of the remainder, 13, are unknown.

Of the total number, as reported to your Commission, 186 are given as having probably contracted the disease in the United States. While your Commission does not wish to discredit the accuracy of the information furnished by the observers who have reported this large proportion of the cases as having contracted the disease in our country, it feels justified in expressing the opinion that some of them, perhaps, brought the disease with them from foreign lands. In the case of leprosy it is very difficult to determine just where the infection was contracted, because the disease sometimes has such a long period of incubation, extending in some instances over years. The fact that a person was born in the United States, and afterwards contracts leprosy, is not sufficiently strong evidence that the disease was contracted in the United States, for when such cases are examined more closely the fact is often brought to light that they spent a portion of their time in China, Hawaiian Islands, West Indies, or other places, where the disease prevails in epidemic form. Despite these facts, there is no doubt that many of the cases discovered by your Commission, as well as others, of which we have no cognizance, have contracted the disease in the United States.

Of the total number of cases reported 176 are males and 102 females.

It is of great importance to note, as a result of the work of your Commission, that of the 278 cases of leprosy in the United States only 72 are isolated. As the disease is a contagious one, even though contracted with difficulty, the great need of proper institutions in the United States where these unfortunate people may be housed and treated is apparent not only for the sake of the sick but as a protection to the well.

It will be noted from the tables that the anesthetic variety of the disease seems to be more prevalent in the Southern States, while more cases of the tubercular variety are reported from the colder latitudes. There are decidedly more of the anesthetic variety among the cases reported than of the tubercular, which is a practical point in the control of the disease, as the anesthetic variety is more difficult of diagnosis.

As far as nationalities are concerned more than half of the total number of cases reported to your Commission are American born. Scandinavia comes next, there being 22 Norwegian, 11 Icelandic, and 8 Swede. Of the oriental races, 20 cases are of Chinese and 1 Japanese. Germany furnished 12 of the cases and the Spanish main 22, as follows: Bahamas, 12; Cuba, 6; and other West Indian islands, 4. Three of the cases are from Mexico, 6 from Ireland, and 3 from England. The Latin countries are represented by 3 cases from France, 3 from Italy, and 1 from Spain. In the remaining cases the nationalities are scattering or not stated.

Your Commission limited its labors to the investigation of the disease within the boundaries of the United States as they existed at the time the law was enacted. The known statistics for the Territory of Hawaii are, however, included in the report as being of interest in connection with the subject of legislation to prevent not only the spread of the disease in the United States proper, but also its introduction from transoceanic possessions, as well as from foreign countries.

Of the States and Territories of the United States 21 are known to have lepers, showing the broad distribution of the disease throughout the country.

The report of your Commission shows that the number of cases of leprosy in the United States is smaller than is generally and currently believed; that leprosy is conveyed from one person to another in the United States, such conveyance being most markedly noticeable in the States on the southern coast; that a large majority of the cases of leprosy in the United States (over 73 per cent) are at large; that at present only 72 of the cases are isolated and provided for by the States or cities in which they are located, and that many of those now at large, if not all, would be willing to be cared for by the public if proper leprosaria existed for their treatment and comfort.

RECOMMENDATIONS.

In view of all the facts stated, and of the opinions expressed by competent authorities on the subject, some of which we have submitted as part of this report, your Commission recommends the establishment of at least one—preferably two—national leprosaria for the care and treatment of these unfortunate people, to be maintained by and under the supervision of the General Government.

Such leprosaria to be of the greatest benefit must be situated in a salubrious climate and be provided with every means for the treatment and care of their inmates and with the comforts of life and sources of occupation and amusement. They must be made as attractive as it is possible to make them, so as not to be looked upon as a species of poorhouse or prison by the victims of the disease. The best means to accomplish this end would be the selection of sites covering broad areas in healthful localities, where the inmates can have unlimited and unrestrained outdoor exercise and occupation, roaming over well-kept grounds, enjoying pleasant vistas, or engaged in tilling fertile fields as a distraction to their minds and in order to make their retreat a comfortable home rather than a miserable place of confinement.

Comfortable houses should be provided. Luxuries are not required, but the institutions should be provided with all the necessities and comforts requisite to making these retreats so attractive that, the fact becoming widely known, the unfortunate victims of this dread disease will, rather than hide their affliction, make known their condition and request admission to these public institutions of their own free will.

The patients must not be made to feel that they are under any restraint, and this again emphasizes the fact that large areas must be set apart for the uses of these proposed institutions, in most pleasant localities as regards climate and temperature. Ideal locations for such leprosaria, in the opinion of your Commission, would be (1) the arid Southwest; (2) similar regions farther north; (3) an island in the Gulf of Mexico, or an island near the Pacific coast of the United States.

We respectfully submit that the matter of establishing the proposed leprosaria and caring for those of our people who are suffering with leprosy should be made the subject of early action by Congress.

Respectfully,

J. H. White,
Surgeon, M. H. S., Chairman.
George T. Vaughan,
Surgeon, M. H. S.
M. J. Rosenau,
Passed Assistant Surgeon, M. H. S., Recorder.

The Surgeon-General Marine-Hospital Service,
Washington, D. C.

TABLE No. 1.—*Cases of leprosy in the United States.*

ALABAMA.

No.	Sex.	Age.	Nationality.	Where probably contracted.	Variety.	Confined or at large.
1	M.	50	American	United States	(?)	At large.

CALIFORNIA.

1	F.	58	English	United States	Tubercular	Confined.
2	F.	20	German	Hawaii	do	Do.
3	F.	38	Chinese	United States	do	Do.
4	M.	40	Kanaka	Inherited	do	Do.
5	M.	25	Mexican	United States	do	Do.
6	M.	49	Swedish	Alaska	do	Do.
7	M.	34	Chinese	United States	do	Do.
8	M.	30	do	do	do	Do.
9	M.	40	do	(?)	do	Do.
10	M.	40	do	United States	do	Do.
11	M.	31	do	do	do	Do.
12	M.	37	do	do	do	Do.
13	M.	37	do	China	do	Do.
14	M.	56	do	United States	Mixed	Do.
15	F.	21	do	(?)	Anæsthetic	At large.
16	M.	14	American	Hawaii	do	Do.
17	M.	25	Chinese	China	Tubercular	Do.
18	F.	47	Irish	Hawaii	Anæsthetic	Do.
19	M.	22	American	do	do	Do.
20	M.	29	do	do	do	Do.
21	M.	.....	do	do	do	Do.
22	M.	27	Chinese	United States	Tubercular	Confined.
23	M.	50	American	do	do	Do.
24	M.	10	Tahitian	Tahiti	do	Do.

FLORIDA.

1	F.	60	Bahamas	United States	Anæsthetic	At large.
2	M.	12	do	do	do	Do.
3	M.	25	American	do	do	Do.
4	M.	28	do	do	do	Do.
5	M.	40	Bahamas	(?)	do	Do.
6	M.	12	Cuban	United States	do	Do.
7	M.	16	do	do	do	Do.
8	F.	35	Bahamas	(?)	do	Do.
9	M.	16	American	United States	do	Do.
10	M.	20	do	do	do	Do.
11	M.	40	Bahamas	do	do	Do.
12	M.	50	Cuban	(?)	do	Do.
13	M.	60	Bahamas	United States	do	Do.
14	F.	40	do	do	do	Do.
15	M.	35	do	do	do	Do.
16	F.	30	Cuban	do	do	Do.
17	M.	45	Bahamas	do	do	Do.
18	M.	50	do	(?)	do	Do.
19	M.	50	do	United States	do	Do.
20	F.	55	do	do	do	Do.
21	M.	18	Cuban	do	do	Do.
22	F.	40	do	do	do	Do.
23	F.	23	American	do	do	Do.
24	M.	.....	(?)	(?)	(?)	Do.

GEORGIA.

1	F.	42	American	United States	Anæsthetic	At large.

ILLINOIS.

1	M.	.....	Chinese	China	(?)	At large.
2	M.	.....	Greek	Greece	(?)	Do.
3	M.	.....	Mexican	Mexico	Tubercular	Do.
4	M.	45	American	United States	do	Do.
5	M.	23	Australian	Hawaii	Mixed	Do.

TABLE No. 1.—*Cases of leprosy in the United States*—Continued.

IOWA.

No.	Sex.	Age.	Nationality.	Where probably contracted.	Variety.	Confined or at large.
1	F.	.....	Norwegian	Norway	Tubercular	At large.

LOUISIANA.

1	F.	25	American	United States	Mixed	At large.
2	F.	40	do	do	Tubercular	Do.
3	F.	34	do	do	Anæsthetic	Do.
4	F.	50	do	do	Mixed	Do.
5	F.	30	do	do	do	Do.
6	F.	29	do	do	do	Do.
7	M.	40	German	do	Tubercular	Do.
8	F.	19	American	do	do	Do.
9	F.	10	do	do	Anæsthetic	Do.
10	M.	32	do	do	Tubercular	Do.
11	M.	40	do	do	Mixed	Do.
12	F.	35	do	do	Mutilating	Do.
13	M.	21	do	do	Tubercular	Confined.
14	M.	24	do	do	Anæsthetic	Do.
15	F.	50	do	do	Tubercular	Do.
16	F.	48	do	do	Mixed	At large.
17	F.	37	do	do	Anæsthetic	Do.
18	M.	44	do	do	do	Do.
19	F.	25	do	do	do	Do.
20	F.	50	Swede	do	Mixed	Do.
21	M.	44	American	do	Anæsthetic	Do.
22	M.	19	do	do	do	Do.
23	F.	54	German	do	Mixed	Do.
24	F.	47	American	do	Tubercular	Do.
25	M.	16	do	do	Mixed	Do.
26	F.	46	do	do	Anæsthetic	Do.
27	F.	34	do	do	do	Do.
28	F.	71	German	do	Mixed	Do.
29	M.	12	American	do	Anæsthetic	Do.
30	M.	25	do	do	do	Do.
31	F.	25	English	do	Mixed	Do.
32	M.	43	American	do	Tubercular	Do.
33	M.	16	do	do	Mixed	Do.
34	M.	58	Spanish	do	Anæsthetic	Do.
35	F.	10	American	do	Tubercular	Confined.
36	F.	46	do	do	Anæsthetic	At large.
37	F.	16	do	do	do	Confined.
38	F.	.....	(?)	(?)	(?)	At large.
39	F.	19	American	United States	Anæsthetic	Do.
40	F.	44	do	do	Tubercular	Do.
41	M.	33	do	do	Mixed	Confined.
42	F.	50	do	do	Anæsthetic	At large.
43	M.	58	Irish	do	Trophic	Do.
44	M.	30	American	do	Anæsthetic	Do.
45	M.	12	do	do	Tubercular	Do.
46	F.	61	German	do	Mixed	Do.
47	F.	40	American	do	Tubercular	Do.
48	F.	19	do	do	Anæsthetic	Do.
49	M.	62	Irish	do	do	Do.
50	F.	11	American	do	Tubercular	Confined.
51	F.	17	do	do	Anæsthetic	At large.
52	M.	19	do	do	Mixed	Do.
53	F.	30	do	do	Anæsthetic	Do.
54	M.	47	do	do	do	Do.
55	F.	36	do	do	Mixed	Do.
56	M.	28	do	do	Trophic	Do.
57	M.	10	do	do	Anæsthetic	Do.
58	M.	37	do	do	Mixed	Do.
59	M.	.....	(?)	(?)	Trophic	Do.
60	F.	17	American	United States	Anæsthetic	Do.
61	F.	52	German	do	do	Do.
62	M.	.....	(?)	(?)	(?)	Do.
63	M.	.....	(?)	(?)	(?)	Do.
64	F.	55	French	United States	Anæsthetic	Do.
65	F.	37	American	do	do	Do.
66	M.	60	(?)	do	do	Do.
67	M.	64	American	do	Tubercular	Do.
68	M.	45	do	do	do	Do.
69	M.	50	do	do	do	Confined.
70	F.	27	do	do	Mixed	At large.
71	F.	40	do	do	Trophic	Confined
72	M.	40	do	do	Mixed	At large.
73	F.	54	do	do	Trophic	Do.
74	F.	42	do	do	Tubercular	Do.

TABLE No. 1.—*Cases of leprosy in the United States*—Continued.

LOUISIANA—Continued.

No.	Sex.	Age.	Nationality.	Where probably contracted.	Variety.	Confined or at large.
75	M.	61	American	United States	Trophic	At large.
76	M.	52	do	do	Tubercular	Do.
77	M.	57	German	do	Mixed	Do.
78	M.	.....	American	do	Tubercular	Do.
79	M.	10	do	do	do	Do.
80	M.	22	do	do	Mixed	Do.
81	M.	60	German	do	do	Confined.
82	F.	70	American	do	Anæsthetic	At large.
83	F.	47	do	do	do	Do.
84	M.	60	German	do	Trophic	Do.
85	F.	10	American	do	Tubercular	Do.
86	M.	.....	French	(?)	Mixed	Do.
87	F.	19	American	United States	Anæsthetic	Do.
88	M.	14	do	do	Tubercular	Do.
89	M.	17	do	do	Anæsthetic	Do.
90	M.	26	do	do	Tubercular	Do.
91	F.	9	do	do	Trophic	Do.
92	M.	8	do	do	Tubercular	Do.
93	F.	16	do	do	Mixed	Confined.
94	F.	60	Irish	do	Anæsthetic	Do.
95	M.	63	(?)	do	do	At large.
96	M.	12	American	do	Mixed	Do.
97	F.	40	do	do	Anæsthetic	Do.
98	M.	50	(?)	(?)	(?)	Do.
99	F.	45	American	United States	Mixed	Do.
100	M.	30	do	do	Trophic	Do.
101	F.	53	do	do	Anæsthetic	Do.
102	M.	48	do	do	do	Do.
103	F.	18	do	do	Mixed	Confined.
104	M.	16	do	do	Tubercular	Do.
105	F.	23	do	do	Anæsthetic	Do.
106	F.	54	do	do	Tubercular	At large.
107	M.	30	do	do	Mixed	Do.
108	M.	.....	do	(?)	(?)	Do.
109	F.	45	do	United States	Anæsthetic	Do.
110	M.	49	do	do	Mixed	Confined.
111	M.	27	do	do	do	Do.
112	M.	35	do	do	do	Do.
113	F.	31	do	do	do	Do.
114	M.	29	do	do	do	Do.
115	M.	50	French	do	Anæsthetic	Do.
116	F.	47	American	do	do	Do.
117	F.	31	do	do	Mixed	Do.
118	F.	35	(?)	do	do	Do.
119	F.	25	American	do	Anæsthetic	Do.
120	F.	45	do	do	Mixed	Do.
121	M.	15	do	do	Tubercular	Do.
122	M.	53	(?)	do	Anæsthetic	Do.
123	F.	15	American	do	do	Do.
124	M.	16	(?)	(?)	Mixed	Do.
125	M.	20	American	United States	Anæsthetic	Do.
126	M.	.....	do	do	Mixed	Do.
127	M.	.....	Irish	do	do	Do.
128	M.	.....	(?)	(?)	do	Do.
129	F.	.....	American	United States	do	Do.
130	F.	13	do	do	Anæsthetic	At large.
131	M.	63	do	do	Tubercular	Do.
132	M.	58	do	do	Anæsthetic	Do.
133	M.	30	do	do	do	Confined.
134	M.	38	do	do	Tubercular	At large.
135	M.	40	do	do	Anæsthetic	Do.
136	M.	32	do	do	Mixed	Do.
137	M.	22	do	do	do	Do.
138	M.	52	German	do	Anæsthetic	Do.
139	M.	14	American	do	do	Do.
140	M.	68	do	do	Mixed	Do.
141	M.	31	do	do	do	Do.
142	M.	19	do	do	Tubercular	Do.
143	F.	34	do	do	Anæsthetic	Do.
144	F.	48	do	do	Mixed	Do.
145	F.	14	do	do	Anæsthetic	Do.
146	F.	53	German	do	Mixed	Do.
147	M.	40	Italian	(?)	Anæsthetic	Do.
148	M.	30	do	(?)	do	Do.
149	M.	.....	do	(?)	(?)	Do.
150	M.	.....	American	(?)	(?)	Do.
151	M.	48	Mexican	Mexico	Tubercular	Do.
152	M.	18	American	United States	Mixed	Confined.
153	F.	.....	(?)	(?)	(?)	Do.
154	F.	53	American	United States	Tubercular	At large.
155	M.	52	do	do	do	Do.

TABLE No. 1.—*Cases of leprosy in the United States*—Continued.

MARYLAND.

No.	Sex.	Age.	Nationality.	Where probably contracted.	Variety.	Confined or at large.
1	F.	37	American	United States	Mixed	At large.

MASSACHUSETTS.

1	M.	23	Japanese	Hawaii	Tabercular	At large.
2	M.	40	American	(?)	do	Confined.

MINNESOTA.

1	M.	44	Swede	Sweden	Anæsthetic	Confined.
2	M.	80	Norwegian	Norway	do	Isolated.
3	F.	60	do	do	do	At large.
4	M.	33	do	do	Tubercular	Isolated.
5	M.	48	do	do	do	Do.
6	M.	40	do	do	Anæsthetic	At large.
7	F.	35	Swede	Sweden	Tubercular	Isolated.
8	M.	53	Norwegian	Norway	Anæsthetic	At large.
9	M.	39	Swede	Sweden	Tubercular	Do.
10	M.	42	do	do	do	Do.
11	M.	67	Norwegian	Norway	do	Isolated.
12	M.	44	do	do	do	At large.
13	M.	32	do	do	Mixed	Do.
14	M.	55	do	do	Anæsthetic	Do.
15	M.	.....	do	do	Tubercular	Do.
16	M.	31	do	do	do	Do.
17	M.	55	do	do	Anæsthetic	Do.
18	M.	.....	do	do	Tubercular	Do.
19	M.	.....	do	do	Anæsthetic	Do.
20	M.	.....	do	do	(?)	Do.

MISSISSIPPI.

1	F.	80	American	United States	Tubercular	At large.
2	M.	55	do	do	do	Do.
3	M.	40	do	do	Anæsthetic	Isolated.
4	M.	30	do	do	do	Do.
5	F.	67	do	do	Tubercular	At large.

MISSOURI.

1	F.	35	American	Mexico	Tubercular	At large.
2	M.	56	Irish	(?)	Anæsthetic	Do.
3	F.	32	American	United States	Tubercular	Do.
4	M.	50	do	do	do	Do.
5	M.	34	Chinese	China	Anæsthetic	Confined.

MONTANA.

1	M.	.....	Chinese	China	Anæsthetic	At large.

NEVADA.

1	M.	53	Chinese	United States	Anæsthetic	At large.

NEW YORK.

1	M.	28	West Indian	West India	Anæsthetic	At large.
2	M.	20	do	do	do	Do.
3	M.	14	do	do	Mixed	Do.
4	M.	28	Chinese	United States	Tubercular	Do.
5	M.	7	West Indian	West India	Anæsthetic	Do.
6	M.	.....	Sicilian	(?)	do	Do.
7	M.	30	American	United States	do	Do.

TABLE No. 1.—*Cases of leprosy in the United States*—Continued.

NORTH DAKOTA.

No.	Sex.	Age.	Nationality.	Where probably contracted.	Variety.	Confined or at large.
1	M.	53	Norwegian	Norway	Tubercular	Isolated.
2	M.	30	Swede	Sweden	do	Do.
3	M.	.....	Chinese	China	(?)	At large.
4	M.	.....	Icelander	Iceland	Tubercular	Confined.
5	F.	22	do	do	do	At large.
6	F.	35	do	do	Anæsthetic	Do.
7	M.	18	do	do	Tubercular	Do.
8	M.	17	do	do	do	Do.
9	F.	56	do	do	do	Do.
10	M.	40	do	do	Anæsthetic	Do.
11	F.	58	do	do	Tubercular	Do.
12	F.	.....	do	do	do	Do.
13	M.	.....	do	do	do	Do.
14	F.	68	do	do	(?)	Do.
15	M.	.....	Chinese	China	(?)	Do.
16	M.	.....	Norwegian	Norway	Tubercular	Isolated.

OREGON.

1	M.	35	Chinese	China	Tubercular	(?)

PENNSYLVANIA.

1	F.	78	American	United States	Mixed	Confined.

SOUTH DAKOTA.

1	M.	19	Norwegian	Norway	Tubercular	Confined.

TEXAS.

1	M.	57	English	China	Tubercular	At large.
2	F.	36	German	Mexico	Mixed	Isolated.
3	M.	50	American	United States	do	At large.

WISCONSIN.

1	M.	66	Norwegian	Norway	Anæsthetic	At large.
2	F.	42	Swede	Sweden	Tubercular	Do.
3	F.	.....	Norwegian	Norway	do	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county.*

ALABAMA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Autauga	None.	Cleburne	None.
Baldwin	Do.	Coffee	Do.
Barbour	Do.	Colbert	Do.
Bibb	No report.	Conecuh	Do.
Blount	None.	Coosa	Do.
Bullock	Do.	Covington	Do.
Butler	Do.	Crenshaw	Do.
Calhoun	Do.	Cullman	1 case.
Chambers	Do.	Dale	None.
Cherokee	Do.	Dallas	Do.
Chilton	Do.	Dekalb	Do.
Choctaw	No report.	Elmore	Do.
Clarke	Do.	Escambia	No report.
Clay	None.	Etowah	None.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

ALABAMA—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Fayette	None.	Mobile	None.
Franklin	Do.	Monroe	Do.
Geneva	Do.	Montgomery	Do.
Greene	Do.	Morgan	Do.
Hale	Do.	Perry	No report.
Henry	No report.	Pickens	None.
Jackson	None.	Pike	1 suspected case.
Jefferson	Do.	Randolph	None.
Lamar	Do.	Russell	Do.
Lauderdale	No report.	St. Clair	Do.
Lawrence	None.	Shelby	Do.
Lee	No report.	Sumter	Do.
Limestone	None.	Talladega	Do.
Lowndes	Do.	Tallapoosa	Do.
Macon	Do.	Tuscaloosa	Do.
Madison	Do.	Walker	Do.
Marengo	No report.	Washington	No report.
Marion	None.	Wilcox	None.
Marshall	Do.	Winston	Do.

ALABAMA.—Sixty-six counties. Fifty-four counties report no cases of leprosy therein. Cullman County reports 1 case of leprosy and Pike County 1 case of suspected leprosy. No report was received from the following 10 counties: Bibb, Choctaw, Clarke, Escambia, Henry, Lauderdale, Lee, Marengo, Perry, and Washington.

ARIZONA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Apache	None.	Navajo	None.
Cochise	Do.	Pima	Do.
Coconino	No report.	Pinal	Do.
Gila	Do.	Santa Cruz	No report.
Graham	Do.	Yavapai	Do.
Maricopa	None	Yuma	None.
Mohave	Do.		

ARIZONA.—Thirteen counties. Eight counties report no cases of leprosy therein. Dr. George Goodfellow, Tucson, Ariz., says: "No cases ever reported in Arizona." No report was received from the following five counties: Coconino, Gila, Graham, Santa Cruz, and Yavapai.

ARKANSAS.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Arkansas	No report.	Greene	None.
Ashley	Do.	Hempstead	Do.
Baxter	None.	Hot Springs	Do.
Benton	Do.	Howard	Do.
Boone	No report.	Independence	Do.
Bradley	None.	Izard	Do.
Calhoun	Do.	Jackson	Do.
Carroll	Do.	Jefferson	Do.
Chicot	No report.	Johnson	Do.
Clark	None.	Lafayette	Do.
Clay	Do.	Lawrence	No report.
Cleburne	Do.	Lee	None.
Cleveland	Do.	Lincoln	Do.
Columbia	Do.	Little River	Do.
Conway	Do.	Logan	Do.
Craighead	Do.	Lonoke	No report.
Crawford	Do.	Madison	None.
Crittenden	Do.	Marion	Do.
Cross	Do.	Miller	Do.
Dallas	Do.	Mississippi	Do.
Desha	Do.	Monroe	Do.
Drew	Do.	Montgomery	Do.
Faulkner	Do.	Nevada	Do.
Franklin	No report.	Newton	Do.
Fulton	None.	Ouachita	Do.
Garland	Do.	Perry	Do.
Grant	Do.	Phillips	Do.

TABLE NO. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

ARKANSAS—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Pike	None.	Sebastian	No report.
Poinsett	Do.	Sevier	Do.
Polk	Do.	Sharp	None.
Pope	Do.	Stone	Do.
Prairie	Do.	Union	Do.
Pulaski	No report.	Van Buren	Do.
Randolph	None.	Washington	Do.
St. Francis	Do.	White	Do.
Saline	Do.	Woodruff	Do.
Scott	Do.	Yell	Do.
Searcy	Do.		

ARKANSAS.—Seventy-five counties. Sixty-five counties report no cases of leprosy therein. No report was received from the following ten counties: Arkansas, Ashley, Boone, Chicot, Franklin, Lawrence, Lonoke, Pulaski, Sebastian, and Sevier.

CALIFORNIA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Alameda	1 case.	Placer	None.
Alpine	None.	Plumas	Do.
Amador	Do.	Riverside	Do.
Butte	Do.	Sacramento	Do.
Calaveras	Do.	San Benito	Do.
Colusa	Do.	San Bernardino	No report.
Contra Costa	No report.	San Diego	None.
Del Norte	None.	San Francisco	18 cases.
Eldorado	Do.	San Joaquin	None.
Fresno	No report.	San Luis Obispo	Do.
Glenn	None.	San Mateo	Do.
Humboldt	Do.	Santa Barbara	Do.
Kern	Do.	Santa Clara	Do.
Kings	No report.	Santa Cruz	Do.
Lake	None.	Shasta	Do.
Lassen	Do.	Sierra	Do.
Los Angeles	1 case.	Siskiyou	Do.
Madera	No report.	Solano	Do.
Marin	None.	Sonoma	Do.
Mariposa	Do.	Stanislaus	Do.
Mendocino	Do.	Sutter	Do.
Merced	Do.	Tehama	Do.
Modoc	Do.	Trinity	No report.
Mono	Do.	Tulare	Do.
Monterey	Do.	Tuolumne	None.
Napa	Do.	Ventura	Do.
Nevada	Do.	Yolo	Do.
Orange	Do.	Yuba	Do.

CALIFORNIA.—Fifty-six counties. Forty-six counties report no cases of leprosy therein. One case of leprosy is reported in Alameda County, one case in Los Angeles County, and 18 cases in San Francisco County. Four cases are reported at large in the State whose definite location is not given. The following seven counties have not reported: Contra Costa, Fresno, Kings, Madera, San Bernardino, Trinity, and Tulare.

COLORADO.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Arapahoe	None.	Dolores	None.
Archuleta	No report.	Douglas	Do.
Baca	None.	Eagle	Do.
Bent	Do.	Elbe t	Do.
Boulder	Do.	El Paso	Do.
Chaffee	Do.	Fremont	Do.
Cheyenne	Do.	Garfield	No report.
Clear Creek	Do.	Gilpin	Do.
Conejos	Do.	Grand	None.
Costilla	Do.	Gunnison	Do.
Custer	Do.	Hinsdale	Do.
Delta	Do.	Huerfano	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

COLORADO—Continued,

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Jefferson	None.	Phillips	None.
Kiowa	Do.	Pitkin	Do.
Kit Carson	Do.	Prowers	Do.
Lake	Do.	Pueblo	Do.
La Plata		Rio Blanco	Do.
Larimer	Do.	Rio Grande	Do.
Las Animas	Do.	Routt	Do.
Lincoln	Do.	Saguache	Do.
Logan	Do.	San Juan	Do.
Mesa	Do.	San Miguel	Do.
Mineral	Do.	Sedgwick	Do.
Montezuma	Do.	Summit	Do.
Montrose	Do.	Teller	Do.
Morgan	No report.	Washington	Do.
Otero	None.	Weld	Do.
Ouray	Do.	Yuma	Do.
Park	Do.		

COLORADO.—Fifty-seven counties. Fifty-three report no cases of leprosy therein. Dr. G. E. Tyler, secretary, Colorado State board of health, says: "So far as I am aware, there are no cases of leprosy within the State of Colorado." No report was received from the following four counties: Archuleta, Garfield, Gilpin, and Morgan.

CONNECTICUT.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Fairfield	None.	New Haven	None.
Hartford	Do.	New London	Do.
Litchfield	Do.	Tolland	Do.
Middlesex	No report.	Windham	Do.

CONNECTICUT.—Eight counties. Seven counties report no cases of leprosy therein. No report was received from Middlesex County.

DELAWARE.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Kent	None.	Sussex	None.
Newcastle	Do.		

DELAWARE.—Three counties report no cases of leprosy therein.

DISTRICT OF COLUMBIA.

County.	Cases of leprosy reported.
Washington	None.

DISTRICT OF COLUMBIA.—Reports indicate that no cases of leprosy exist in the District of Columbia.

FLORIDA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Alachua	1 suspected case.	Dade	None.
Baker	None.	De Soto	Do.
Bradford	Do.	Duval	Do.
Brevard	Do.	Escambia	1 case.
Calhoun	Do.	Franklin	None.
Citrus	Do.	Gadsden	Do.
Clay	Do.	Hamilton	Do.
Columbia	No report.	Hernando	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

FLORIDA—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Hillsboro	1 case; 1 suspected case.	Nassau	None.
Holmes	No report.	Orange	Do.
Jackson	None.	Osceola	Do.
Jefferson	Do.	Pasco	Do.
Lafayette	Do.	Polk	Do.
Lake	Do.	Putnam	Do.
Lee	Do.	St. John	No report.
Leon	Do.	Santa Rosa	None.
Levy	Do.	Sumter	Do.
Liberty	Do.	Suwanee	Do.
Madison	Do.	Taylor	No report.
Manatee	Do.	Volusia	None.
Marion	1 suspected case.	Wakulla	Do.
Monroe	22 cases.	Walton	Do.
		Washington	Do.

FLORIDA.—Forty-five counties. Thirty-six counties report no cases of leprosy therein. Cases of suspected leprosy are reported in Alachua, Hillsboro, and Marion counties. One case of leprosy in Hillsboro County, 1 case in Escambia County, and 22 cases in Monroe County. No report from the following counties: Columbia, Holmes, St. John, and Taylor.

GEORGIA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Appling	None.	Franklin	None.
Baker	No report.	Fulton	One case.
Baldwin	None.	Gilmer	None.
Banks	Do.	Glascock	Do.
Bartow	Do.	Glynn	Do.
Berrien	No report.	Gordon	No report.
Bibb	None.	Greene	None.
Brooks	Do.	Gwinnett	No report.
Bryan	No report.	Habersham	None.
Bulloch	Do.	Hall	No report.
Burke	None.	Hancock	None.
Butts	Do.	Haralson	Do.
Calhoun	Do.	Harris	Do.
Camden	Do.	Hart	Do.
Campbell	Do.	Heard	No report.
Carroll	Do.	Henry	None.
Catoosa	Do.	Houston	Do.
Charlton	Do.	Irwin	Do.
Chatham	Do.	Jackson	No report.
Chattahoochee	No report.	Jasper	None.
Chattooga	None.	Jefferson	Do.
Cherokee	Do.	Johnson	Do.
Clarke	Do.	Jones	No report.
Clay	Do.	Laurens	Do.
Clayton	Do.	Lee	None.
Clinch	Do.	Liberty	Do.
Cobb	Do.	Lincoln	Do.
Coffee	Do.	Lowndes	No report.
Colquitt	No report,	Lumpkin	None.
Columbia	None.	McDuffie	Do.
Coweta	Do.	McIntosh	Do.
Crawford	Do.	Macon	Do.
Dade	No report.	Madison	No report.
Dawson	None.	Marion	None.
Decatur	Do.	Meriwether	Do.
Dekalb	Do.	Miller	No report.
Dodge	Do.	Milton	Do.
Dooly	No report.	Mitchell	Do.
Dougherty	Do.	Monroe	None.
Douglas	None.	Montgomery	Do.
Early	No report.	Morgan	Do.
Echols	None.	Murray	No report.
Effingham	Do.	Muscogee	None.
Elbert	Do.	Newton	Do.
Emanuel	No report.	Oconee	Do.
Fannin	None.	Oglethorpe	Do.
Fayette	Do.	Paulding	No report.
Floyd	No report.	Pickens	None.
Forsyth	Do.	Pierce	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

GEORGIA—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Pike	None.	Thomas	None.
Polk	Do.	Towns	Do.
Pulaski	Do.	Troup	No report.
Putnam	Do.	Twiggs	Do.
Quitman	Do.	Union	None.
Rabun	No report.	Upson	Do.
Randolph	None.	Walker	Do.
Richmond	Do.	Walton	Do.
Rockdale	Do.	Ware	Do.
Schley	Do.	Warren	No report.
Screven	Do.	Washington	None.
Spalding	Do.	Wayne	Do.
Stewart	Do.	Webster	Do.
Sumpter	No report.	White	No report.
Talbot	None.	Whitfield	Do.
Taliaferro	Do.	Wilcox	Do.
Tattnall	Do.	Wilkes	Do.
Taylor	No report.	Wilkinson	None.
Telfair	None.	Worth	Do.
Terrell	Do.		

GEORGIA.—One hundred and thirty-seven counties. Ninety-nine counties report no cases of leprosy therein. One case of leprosy is reported to be in Fulton County. Two cases of suspected leprosy were reported from Spalding County, which upon investigation proved to be not leprosy. No report was received from the following thirty-seven counties: Baker, Berrien, Bryan, Bulloch, Chattahoochee, Colquitt, Dade, Dooly, Dougherty, Early, Emanuel, Floyd, Forsyth, Gordon, Gwinnett, Hall, Heard, Jackson, Jones, Laurens, Lowndes, Madison, Miller, Milton, Mitchell, Murray, Paulding, Rabun, Sumter, Taylor, Troup, Twiggs, Warren, White, Whitfield, Wilcox, and Wilkes.

IDAHO.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Ada	None.	Idaho	None.
Bannock	Do.	Kootenai	Do.
Bear Lake	No report.	Latah	Do.
Bingham	None.	Lemhi	Do.
Blaine	Do.	Lincoln	Do.
Boise	Do.	Nez Perces	No report.
Canyon	Do.	Oneida	None.
Cassia	Do.	Owyhee	Do.
Custer	Do.	Shoshone	No report.
Elmore	Do.	Washington	None.
Fremont	Do.		

IDAHO.—Twenty-one counties. Eighteen counties report no cases of leprosy therein. No report was received from the following three counties: Bear Lake, Nez Perces, and Shoshone.

ILLINOIS.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Adams	None	Dekalb	None.
Alexander	Do.	Dewitt	Do.
Bond	Do.	Douglas	Do.
Boone	Do.	Dupage	Do.
Brown	Do.	Edgar	No report.
Bureau	Do.	Edwards	None.
Calhoun	No report	Effingham	Do.
Carroll	None.	Fayette	Do.
Cass	Do.	Ford	Do.
Champaign	Do.	Franklin	No report.
Christian	Do.	Fulton	None.
Clark	Do.	Gallatin	Do.
Clay	Do.	Greene	Do.
Clinton	Do.	Grundy	Do.
Coles	Do.	Hamilton	Do.
Cook	5 cases.	Hancock	Do.
Crawford	None.	Hardin	No report.
Cumberland	Do.	Henderson	None.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

ILLINOIS—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Henry	None.	Moultrie	None.
Iroquois	Do.	Ogle	Do.
Jackson	Do.	Peoria	No report.
Jasper	Do.	Perry	None.
Jefferson	Do.	Piatt	Do.
Jersey	Do.	Pike	Do.
Jo Daviess	Do.	Pope	Do.
Johnson	No report.	Pulaski	Do.
Kane	None.	Putnam	Do.
Kankakee	Do.	Randolph	Do.
Kendall	Do.	Richland	Do.
Knox	Do.	Rock Island	Do.
Lake	Do.	St. Clair	Do.
Lasalle	Do.	Saline	Do.
Lawrence	Do.	Sangamon	Do.
Lee	Do.	Schuyler	Do.
Livingston	Do.	Scott	No report.
Logan	Do.	Shelby	None.
McDonough	Do.	Stark	Do.
McHenry	Do.	Stephenson	Do.
McLean	Do.	Tazewell	Do.
Macon	Do.	Union	No report.
Macoupin	Do.	Vermilion	Do.
Madison	Do.	Wabash	Do.
Marion	Do.	Warren	Do.
Marshall	Do.	Washington	Do.
Mason	Do.	Wayne	Do.
Massac	Do.	White	Do.
Menard	No report.	Whiteside	Do.
Mercer	Do.	Will	Do.
Monroe	None.	Williamson	Do.
Montgomery	Do.	Winnebago	Do.
Morgan	Do.	Woodford	Do.

ILLINOIS.—One hundred and two counties. Ninety-one counties report no cases of leprosy therein. Five cases of leprosy are reported to be in Cook County. No report was received from the following ten counties: Calhoun, Edgar, Franklin, Hardin, Johnson, Menard, Mercer, Peoria, Scott, and Union.

INDIANA.

County.	Cases of leprosy reported.	County.	Cases or leprosy reported.
Adams	None.	Henry	None.
Allen	Do.	Howard	Do.
Bartholomew	Do.	Huntington	Do.
Benton	Do.	Jackson	Do.
Blackford	Do.	Jasper	Do.
Boone	Do.	Jay	Do.
Brown	Do.	Jefferson	Do.
Carroll	Do.	Jennings	Do.
Cass	Do.	Johnson	Do.
Clark	Do.	Knox	Do.
Clay	Do.	Kosciusko	Do.
Clinton	Do.	Lagrange	Do.
Crawford	Do.	Lake	No report.
Daviess	Do.	Laporte	None.
Dearborn	Do.	Lawrence	Do.
Decatur	Do.	Madison	Do.
Dekalb	Do.	Marion	Do.
Delaware	Do.	Marshall	Do.
Dubois	Do.	Martin	Do.
Elkhart	Do.	Miami	Do.
Fayette	Do.	Monroe	Do.
Floyd	Do.	Montgomery	Do.
Fountain	Do.	Morgan	Do.
Franklin	Do.	Newton	Do.
Fulton	Do.	Noble	Do.
Gibson	Do.	Ohio	Do.
Grant	Do.	Orange	Do.
Greene	Do.	Owen	Do.
Hamilton	Do.	Parke	Do.
Hancock	No report.	Perry	Do.
Harrison	None.	Pike	Do.
Hendricks	Do.	Porter	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

INDIANA—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Posey	None.	Tippecanoe	None.
Pulaski	Do.	Tipton	Do.
Putnam	Do,	Union	Do.
Randolph	Do.	Vanderburg	Do.
Ripley	Do.	Vermilion	Do.
Rush	Do.	Vigo	Do.
St. Joseph	Do.	Wabash	Do.
Scott	Do.	Warren	Do.
Shelby	Do.	Warrick	Do.
Spencer	Do.	Washington	Do.
Starke	Do.	Wayne	Do.
Steuben	Do.	Wells	Do.
Sullivan	Do.	White	Do.
Switzerland	Do.	Whitley	Do.

INDIANA.—Ninety-two counties. Ninety counties report no cases of leprosy therein. Dr. J. N. Hurty, secretary State board of health, Indianapolis, says: "Not a case of leprosy in Indiana so far as I know." No report was received from the following counties: Hancock and Lake.

INDIAN TERRITORY.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Cherokee Nation	No report.	Peoria Nation	No report.
Chickasaw Nation	None.	Quapaw Nation	None.
Choctaw Nation	No report.	Seminole Nation	No report.
Creek Nation	None.	Seneca Nation	Do.
Ottawa Nation	Do.	Wyandotte Nation	None.

INDIAN TERRITORY.—Ten counties. Five counties report no cases of leprosy therein, while no report was received from any of the remaining five counties.

IOWA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Adair	None.	Fremont	None.
Adams	Do.	Greene	Do.
Allamakee	Do.	Grundy	Do.
Appanoose	Do.	Guthrie	Do.
Audubon	Do.	Hamilton	Do.
Benton	Do.	Hancock	Do.
Blackhawk	Do.	Hardin	No report.
Boone	1 suspected case.	Harrison	None.
Bremer	None.	Henry	Do.
Buchanan	Do.	Howard	Do.
Buena Vista	Do.	Humboldt	Do.
Butler	Do.	Ida	Do.
Calhoun	Do.	Iowa	No report.
Carroll	Do.	Jackson	None.
Cass	Do.	Jasper	Do.
Cedar	Do.	Jefferson	Do.
Cerro Gordo	Do.	Johnson	Do.
Cherokee	Do.	Jones	No report.
Chickasaw	Do.	Keokuk	None.
Clarke	Do.	Kossuth	Do.
Clay	No report.	Lee	Do.
Clayton	None.	Linn	Do.
Clinton	Do.	Louisa	Do.
Crawford	Do.	Lucas	Do.
Dallas	Do.	Lyon	Do.
Davis	Do.	Madison	Do.
Decatur	No report.	Mahaska	Do.
Delaware	None.	Marion	Do.
Des Moines	Do.	Marshall	Do.
Dickinson	Do.	Mills	Do.
Dubuque	Do.	Mitchell	Do.
Emmet	Do.	Monona	Do.
Fayette	Do.	Monroe	Do.
Floyd	Do.	Montgomery	Do.
Franklin	Do.	Muscatine	Do.

TABLE NO. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

IOWA—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
O'Brien	None.	Tama	None.
Osceola	Do.	Taylor	Do.
Page	Do.	Union	Do.
Palo Alto	Do.	Van Buren	No report.
Plymouth	Do.	Wapello	Do.
Pocahontas	Do.	Warren	None.
Polk	Do.	Washington	Do.
Pottawattamie	Do.	Wayne	Do.
Poweshiek	Do.	Webster	Do.
Ringgold	Do.	Winnebago	Do.
Sac	Do.	Winneshiek	Do.
Scott	Do.	Woodbury	Do.
Shelby	Do.	Worth	Do.
Sioux	Do.	Wright	Do.
Story	Do.		

IOWA.—Ninety-nine counties. Ninety-two counties report no cases of leprosy therein. Boone County reports one case of suspected leprosy. One case of leprosy is reported in Iowa, but it is not definitely located. Two cases of leprosy in Iowa have died within the past two years. No report was received from the following six counties: Clay, Decatur, Hardin, Iowa, Jones, and Van Buren.

KANSAS.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Allen	None.	Labette	None.
Anderson	Do.	Lane	Do.
Atchison	Do.	Leavenworth	Do.
Barber	Do.	Lincoln	Do.
Barton	Do.	Linn	Do.
Bourbon	No report.	Logan	Do.
Brown	None.	Lyon	Do.
Butler	Do.	McPherson	Do.
Chase	Do.	Marion	Do.
Chautauqua	Do.	Marshall	No report.
Cherokee	Do.	Meade	None.
Cheyenne	Do.	Miami	Do.
Clark	Do.	Mitchell	Do.
Clay	Do.	Montgomery	Do.
Cloud	Do.	Morris	Do.
Coffey	Do.	Morton	Do.
Comanche	Do.	Nemaha	Do.
Cowley	Do.	Neosho	Do.
Crawford	No report.	Ness	Do.
Decatur	None.	Norton	No report.
Dickinson	Do.	Osage	None
Doniphan	Do.	Osborne	Do.
Douglas	Do.	Ottawa	Do.
Edwards	Do.	Pawnee	Do.
Elk	Do.	Phillips	Do.
Ellis	Do.	Pottawatomie	Do.
Ellsworth	Do.	Pratt	Do.
Finney	Do.	Rawlins	Do.
Ford	Do.	Reno	Do.
Franklin	Do.	Republic	Do.
Geary	Do.	Rice	Do.
Gove	Do.	Riley	Do.
Graham	No report.	Rooks	Do.
Grant	None.	Rush	Do.
Gray	Do.	Russell	Do.
Greeley	Do.	Saline	Do.
Greenwood	Do.	Scott	Do.
Hamilton	No report.	Sedgwick	Do.
Harper	None.	Seward	Do.
Harvey	Do.	Shawnee	Do.
Haskell	Do.	Sheridan	Do.
Hodgeman	Do.	Sherman	Do.
Jackson	No report.	Smith	Do.
Jefferson	None.	Stafford	Do.
Jewell	Do.	Stanton	Do.
Johnson	Do.	Stevens	Do.
Kearny	Do.	Sumner	Do.
Kingman	Do.	Thomas	Do.
Kiowa	Do.	Trego	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

KANSAS—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Wabaunsee	None.	Wilson	None.
Wallace	Do.	Woodson	Do.
Washington	Do.	Wyandotte	Do.
Wichita	Do.		

KANSAS.—One hundred and five counties. Ninety-eight counties report no cases of leprosy therein. Dr. William B. Swan, secretary State board of health, Topeka, says: "So far as this office has any knowledge, no leprosy exists in this State at the present time." No report was received from the following 7 counties: Bourbon, Crawford, Graham, Hamilton, Jackson, Marshall, and Norton.

KENTUCKY.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Adair	None.	Knox	No report.
Allen	Do.	Larue	None.
Anderson	Do.	Laurel	Do.
Ballard	Do.	Lawrence	Do.
Barren	Do.	Lee	Do.
Bath	Do.	Leslie	Do.
Bell	Do.	Lechter	Do.
Boone	Do.	Lewis	Do.
Bourbon	Do.	Lincoln	One suspected case.
Boyd	Do.	Livingston	None.
Boyle	Do.	Logan	Do.
Bracken	Do.	Lyon	Do.
Breathitt	Do.	McCracken	Do.
Breckinridge	Do.	McLean	Do.
Bullitt	Do.	Madison	Do.
Butler	Do.	Magoffin	Do.
Caldwell	Do.	Marion	Do.
Calloway	Do.	Marshall	Do.
Campbell	Do.	Martin	No report.
Carlisle	Do.	Mason	Do.
Carroll	Do.	Meade	Do.
Carter	Do.	Menifee	None.
Casey	Do.	Mercer	Do.
Christian	Do.	Metcalf	Do.
Clark	Do.	Monroe	Do.
Clay	No report.	Montgomery	Do.
Clinton	None.	Morgan	No report.
Crittenden	Do.	Muhlenberg	None.
Cumberland	Do.	Nelson	Do.
Daviess	Do.	Nicholas	Do.
Edmonson	Do.	Ohio	Do.
Elliott	No report.	Oldham	Do.
Estill	None.	Owen	Do.
Fayette	Do.	Owsley	No report.
Fleming	Do.	Pendleton	None.
Floyd	Do.	Perry	No report.
Franklin	Do.	Pike	None.
Fulton	Do.	Powell	No report.
Gallatin	Do.	Pulaski	None.
Garrard	Do.	Robertson	Do.
Grant	Suspected cases.	Rockcastle	Do.
Graves	None.	Rowan	Do.
Grayson	No report.	Russell	No report.
Green	None.	Scott	None.
Greenup	Do.	Shelby	Do.
Hancock	Do.	Simpson	Do.
Hardin	Do.	Spencer	Do.
Harlan	Do.	Taylor	Do.
Harrison	Do.	Todd	Do.
Hart	Do.	Trigg	Do.
Henderson	Do.	Trimble	Do.
Henry	Do.	Union	Do.
Hickman	Do.	Warren	Do.
Hopkins	Do.	Washington	Do.
Jackson	No report.	Wayne	Do.
Jefferson	None.	Webster	Do.
Jessamine	Do.	Whitley	Do.
Johnson	Do.	Wolfe	Do.
Kenton	Do.	Woodford	Do.
Knott	Do.		

KENTUCKY.—119 counties. One hundred and four counties report no cases of leprosy therein. Grant and Lincoln counties report cases of suspected leprosy. No report was received from the following thirteen counties: Clay, Elliott, Grayson, Jackson, Knox, Martin, Mason, Meade, Morgan, Owsley, Perry, Powell, and Russell.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

LOUISIANA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Acadia	None.	Orleans	101 cases.
Ascension	Do.	Ouachita	None.
Assumption	No report.	Plaquemines	1 case.
Avoyelles	None.	Pointe Coupee	No report.
Bienville	No report.	Rapides	Do.
Bossier	None.	Red River	None.
Caddo	1 suspected case.	Richland	Do.
Calcasieu	1 case.	Sabine	Do.
Caldwell	None.	St. Bernard	Do.
Cameron	Do.	St. Charles	Do.
Catahoula	Do.	St. Helena	No report.
Claiborne	Do.	St. James	Do.
Concordia	Do.	St. John the Baptist	1 case.
De Soto	Do.	St. Landry	Do.
East Baton Rouge	Do.	St. Martin	Do.
East Carroll	Do.	St. Mary	Do.
East Feliciana	Do.	St. Tammany	Do.
Franklin	Do.	Tangipahoa	None.
Grant	Do.	Tenas	Do.
Iberia	No report.	Terrebonne	Do.
Iberville	38 cases.	Union	Do.
Jackson	None.	Vermilion	3 cases.
Jefferson	1 case.	Vernon	No report.
Lafayette	No report.	Washington	None.
Lafourche	2 cases.	Webster	No report.
Lincoln	None.	West Baton Rouge	None.
Livingston	No report.	West Carroll	No report.
Madison	None.	West Feliciana	Do.
Morehouse	Do.	Winn	None.
Natchitoches	Do.		

LOUISIANA.—Fifty-nine counties. Thirty-three counties report no cases of leprosy therein. Calcasieu, Jefferson, Plaquemines, St. John the Baptist, St. Landry, St. Martin, St. Mary, and St. Tammany counties report 1 case each in their respective counties. Thirty-eight cases are reported in Iberville County, 37 of which are confined in the leper home at Iberville; 2 cases are reported in Lafourche County; 101 cases are reported in Orleans County, and 3 cases in Vermilion County. Three more cases are reported in the State; definite location not given. One case of suspected leprosy is reported in Caddo County.

No report has been received from the following 13 counties: Assumption, Bienville, Iberia, Lafayette, Livingston, Pointe Coupee, Rapides, St. Helena, St. James, Vernon, Webster, West Carroll, and West Feliciana.

MAINE.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Androscoggin	None.	Oxford	None.
Aroostook	Do.	Penobscot	Do.
Cumberland	Do.	Piscataquis	Do.
Franklin	Do.	Sagadahoc	Do.
Hancock	No report.	Somerset	Do.
Kennebec	None.	Waldo	Do.
Knox	Do.	Washington	Do.
Lincoln	Do.	York	Do.

MAINE.—Sixteen counties. Fifteen counties report no cases of leprosy therein. Dr. A. G. Young, secretary State board of health, says: "No leprosy in the State." No report was received from Hancock County.

MARYLAND.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Allegany	None.	Harford	None.
Anne Arundel	Do.	Howard	Do.
Baltimore	Do.	Kent	Do.
Baltimore City	1 case.	Montgomery	Do.
Calvert	None.	Prince George	Do.
Caroline	Do.	Queen Anne	Do.
Carroll	Do.	St. Mary	Do.
Cecil	Do.	Somerset	Do.
Charles	No report.	Talbot	Do.
Dorchester	None.	Washington	Do.
Frederick	Do.	Wicomico	Do.
Garrett	Do.	Worcester	Do.

MARYLAND.—Twenty-four counties. Twenty-two counties report no cases of leprosy therein; Baltimore City County reports one case of leprosy. No report was received from Charles County.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

MASSACHUSETTS.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Barnstable	None.	Hampshire	None.
Berkshire	Do.	Middlesex	1 case.
Bristol	Do.	Nantucket	None.
Dukes	Do.	Norfolk	Do.
Essex	Do.	Plymouth	Do.
Franklin	Do.	Suffolk	Do.
Hampden	1 case.	Worcester	Do.

MASSACHUSETTS.—Fourteen counties. Twelve counties report no cases of leprosy therein. Hampden and Middlesex counties report one case of leprosy each.

MICHIGAN.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Alcona	None.	Lake	None.
Alger	Do.	Lapeer	Do.
Allegan	Do.	Leelanaw	Do.
Alpena	Do.	Lenawee	Do.
Antrim	Do.	Livingston	No report.
Arenac	Do.	Luce	None.
Baraga	Do.	Mackinac	No report.
Barry	Do.	Macomb	None.
Bay	Do.	Manistee	Do.
Benzie	Do.	Marquette	Do.
Berrien	Do.	Mason	Do.
Branch	Do.	Mecosta	Do.
Calhoun	Do.	Menominee	Do.
Cass	Do.	Midland	Do.
Charlevoix	Do.	Missaukee	Do.
Cheboygan	Do.	Monroe	Do.
Chippewa	Do.	Montcalm	Do.
Clare	Do.	Montmorency	Do.
Clinton	Do.	Muskegon	Do.
Crawford	Do.	Newaygo	Do.
Delta	Do.	Oakland	No report.
Dickinson	Do.	Oceana	None.
Eaton	Do.	Ogemaw	Do.
Emmet	Do.	Ontonagon	Do.
Genesee	Do.	Osceola	Do.
Gladwin	Do.	Oscoda	Do.
Gogebic	Do.	Otsego	Do.
Grand Traverse	Do.	Ottawa	Do.
Gratiot	Do.	Presque Isle	Do.
Hillsdale	Do.	Roscommon	Do.
Houghton	Do.	Saginaw	Do.
Huron	Do.	St. Clair	Do.
Ingham	Do.	St. Joseph	Do.
Ionia	Do.	Sanilac	Do.
Iosco	Do.	Schoolcraft	Do.
Iron	Do.	Shiawassee	Do.
Isabella	Do.	Tuscola	No report.
Jackson	Do.	Van Buren	None.
Kalamazoo	Do.	Washtenaw	Do.
Kalkaska	Do.	Wayne	Do.
Kent	Do.	Wexford	Do.
Keweenaw	Do.		

MICHIGAN.—Eighty-three counties. Seventy-nine counties report no cases of leprosy therein. Dr. Henry B. Baker, secretary State board of health, says: "There is no case of leprosy in Michigan." No report was received from the following four counties: Livingston, Mackinac, Oakland, and Tuscola.

MINNESOTA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Aitkin	None.	Bigstone	None.
Anoka	Do.	Blue Earth	Do.
Becker	Do.	Brown	1 case.
Beltrami	Do.	Carlton	None.
Benton	Do.	Carver	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

MINNESOTA—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Cass	None.	Murray	None.
Chippewa	1 case.	Nicollet	Do.
Chisago	None.	Nobles	Do.
Clay	Do.	Norman	Do.
Cook	Do.	Olmsted	Do.
Cottonwood	Do.	Ottertail	Do.
Crow Wing	Do.	Pine	Do.
Dakota	Do.	Pipestone	Do.
Dodge	Do.	Polk	3 cases.
Douglas	Do.	Pope	1 case.
Faribault	1 case.	Ramsey	None.
Fillmore	None.	Red Lake	Do.
Freeborn	Do.	Redwood	Do,
Goodhue	Do.	Renville	Do.
Grant	Do.	Rice	Do.
Hennepin	4 cases.	Rock	Do.
Houston	None.	Roseau	Do.
Hubbard	Do.	St. Louis	1 case.
Isanti	Do.	Scott	None.
Itasca	Do.	Sherburne	Do.
Jackson	Do.	Sibley	Do.
Kanabec	Do.	Stearns	Do.
Kandiyohi	1 case.	Steele	Do.
Kittson	None.	Stevens	Do.
Lac Qui Parle	Do.	Swift	Do.
Lake	Do.	Todd	Do.
Lesueur	Do.	Traverse	Do.
Lincoln	Do.	Wabasha	Do.
Lyon	Do.	Wadena	Do.
McLeod	Do.	Waseca	Do.
Marshall	1 case.	Washington	Do.
Martin	None.	Watonwan	1 case.
Meeker	Do.	Wilkin	None.
Millelacs	Do.	Winona	Do.
Morrison	Do.	Wright	Do.
Mower	Do.	Yellow Medicine	Do.

MINNESOTA.—Eighty-two counties. Seventy-two counties are reported to be free from leprosy; the disease existing in 10 counties as follows: Brown, 1 case; Chippewa, 1 case; Faribault, 1 case; Hennepin, 4 cases; Kandiyohi, 1 case; Marshall, 1 case; Polk, 3 cases; Pope, 1 case; St. Louis, 1 case; Watonwan, 1 case. There are 5 additional cases of leprosy in the State which are not definitely located.

MISSISSIPPI.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Adams	No report.	Jones	No report.
Alcorn	None.	Kemper	None.
Amite	Do.	Lafayette	Do.
Attala	Do.	Lauderdale	No report.
Benton	Do.	Lawrence	None.
Bolivar	Do.	Leake	Do.
Calhoun	No report.	Lee	No report.
Carroll	None.	Leflore	Do.
Chickasaw	No report.	Lincoln	None.
Choctaw	None.	Lowndes	Do.
Claiborne	Do.	Madison	Do.
Clarke	Do.	Marion	No report.
Clay	Do.	Marshall	None.
Coahoma	Do.	Monroe	Do.
Copiah	Do.	Montgomery	Do.
Covington	No report.	Neshoba	Do.
De Soto	None.	Newton	Do.
Franklin	Do.	Noxubee	Do.
Greene	Do.	Oktibbeha	Do.
Grenada	Do.	Panola	Do.
Hancock	Do.	Pearl River	Do.
Harrison	3 cases.	Perry	No report.
Hinds	None.	Pike	None.
Holmes	Do.	Pontotoc	No report.
Issaquena	Do.	Prentiss	Do.
Itawamba	No report.	Quitman	None.
Jackson	None.	Rankin	Do.
Jasper	Do.	Scott	Do.
Jefferson	Do.	Sharkey	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

MISSISSIPPI—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Simpson	No report.	Warren	No report.
Smith	Do.	Washington	Do.
Sunflower	None.	Wayne	None.
Tallahatchie	Do.	Webster	Do.
Tate	Do.	Wilkinson	2 cases.
Tippah	Do.	Winston	No report.
Tishomingo	Do.	Yalobusha	None.
Tunica	Do.	Yazoo	Do.
Union	Do.		

MISSISSIPPI.—Seventy-five counties. Fifty-five counties report no cases of leprosy therein. Harrison County reports 3 cases and Wilkinson County 2 cases. No report was received from the following 18 counties: Adams, Calhoun, Chickasaw, Covington, Itawamba, Jones, Lauderdale, Lee, Leflore, Marion, Perry, Pontotoc, Prentiss, Simpson, Smith, Warren, Washington, and Winston.

MISSOURI.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Adair	None.	Lawrence	None.
Andrew	No report.	Lewis	Do.
Atchison	None.	Lincoln	No report.
Audrain	Do.	Linn	None.
Barry	Do.	Livingston	Do.
Barton	Do.	McDonald	Do.
Bates	No report.	Macon	Do.
Benton	None.	Madison	Do.
Bollinger	Do.	Maries	Do.
Boone	Do.	Marion	Do.
Buchanan	Do.	Mercer	Do.
Butler	Do.	Miller	Do.
Caldwell	Do.	Mississippi	Do.
Callaway	Do.	Moniteau	Do.
Camden	Do.	Monroe	Do.
Cape Girardeau	Do.	Montgomery	Do.
Carroll	No report.	Morgan	Do.
Carter	None.	New Madrid	Do.
Cass	Do.	Newton	Do.
Cedar	Do.	Nodaway	Do.
Chariton	Do.	Oregon	Do.
Christian	Do.	Osage	Do.
Clark	Do.	Ozark	Do.
Clay	Do.	Pemiscot	Do.
Clinton	Do.	Perry	Do.
Cole	Do.	Pettis	Do.
Cooper	Do.	Phelps	Do.
Crawford	Do.	Pike	Do.
Dade	Do.	Platte	Do.
Dallas	Do.	Polk	Do.
Daviess	Do.	Pulaski	Do.
Dekalb	Do.	Putnam	Do.
Dent	Do.	Ralls	Do.
Douglas	No report.	Randolph	Do.
Dunklin	None.	Ray	Do.
Franklin	Do.	Reynolds	Do.
Gasconade	Do.	Ripley	Do.
Gentry	Do.	St. Charles	Do.
Greene	Do.	St. Clair	No report.
Grundy	Do.	St. Genevieve	None.
Harrison	Do.	St. Francois	Do.
Henry	Do.	St. Louis	Do.
Hickory	Do.	St. Louis City	5 cases.
Holt	Do.	Saline	None.
Howard	Do.	Schuyler	Do.
Howell	Do.	Scotland	No report.
Iron	Do.	Scott	None.
Jackson	Do.	Shannon	Do.
Jasper	Do.	Shelby	Do.
Jefferson	Do.	Stoddard	Do.
Johnson	Do.	Stone	No report.
Knox	No report.	Sullivan	None.
Laclede	None.	Taney	Do.
Lafayette	Do.	Texas	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

MISSOURI—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Vernon	None.	Webster	None.
Warren	Do.	Worth	Do.
Washington	Do.	Wright	Do.
Wayne	Do.		

MISSOURI.—One hundred and fifteen counties. One hundred and five counties report no cases of leprosy therein. St. Louis City County reports 5 cases of leprosy. No report was received from the following 9 counties: Andrew, Bates, Carroll, Douglas, Knox, Lincoln, St. Clair, Scotland, and Stone.

MONTANA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Beaverhead	None.	Jefferson	None.
Broadwater	Do.	Lewis and Clarke	Do.
Carbon	Do.	Madison	Do.
Cascade	Do.	Meagher	Do.
Choteau	Do.	Missoula	One case.
Crow Reservation	Do.	Park	None.
Custer	Do.	Ravalli	Do.
Dawson	Do.	Silverbow	Do.
Deerlodge	Do.	Sweet Grass	Do.
Fergus	Do.	Teton	Do.
Flathead	Do.	Valley	No report.
Gallatin	No report.	Yellowstone	None.
Granite	None.		

MONTANA.—Twenty-five counties. Twenty-two counties report no cases of leprosy therein. One case of leprosy is reported in Missoula County. No report was received from Gallatin and Valley counties.

NEBRASKA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Adams	None.	Greeley	None.
Antelope	Do.	Hall	Do.
Banner	Do.	Hamilton	Do.
Blaine	Do.	Harlan	Do.
Boone	Do.	Hayes	No report.
Boxbutte	Do.	Hitchcock	None.
Boyd	No report.	Holt	Do.
Brown	None.	Hooker	Do.
Buffalo	Do.	Howard	Do.
Burt	Do.	Jefferson	Do.
Butler	Do.	Johnson	Do.
Cass	Do.	Kearney	Do.
Cedar	Do.	Keith	Do.
Chase	Do.	Keyapaha	Do.
Cherry	Do.	Kimball	Do.
Cheyenne	Do.	Knox	Do.
Clay	Do.	Lancaster	Suspected case.
Colfax	Do.	Lincoln	None.
Cuming	No report.	Logan	Do.
Custer	None.	Loup	Do.
Dakota	Do.	McPherson	Do.
Dawes	Do.	Madison	Do.
Dawson	Do.	Merrick	Do.
Deuel	Do.	Nance	Do.
Dixon	Do.	Nemeha	Do.
Dodge	Do.	Nuckolls	Do.
Douglas	Do.	Otoe	Do.
Dundy	None.	Pawnee	Do.
Fillmore	No report.	Perkins	Do.
Franklin	None.	Phelps	Do.
Frontier	Do.	Pierce	Do.
Furnas	Do.	Platte	Do.
Gage	Do.	Polk	Do.
Garfield	Do.	Redwillow	Do.
Gosper	Do.	Richardson	Do.
Grant	Do.	Rock	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

NEBRASKA—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Saline	No report.	Thayer	None.
Sarpy	None.	Thomas	Do.
Saunders	Do.	Thurston	No report.
Scotts Bluff	Do.	Valley	None.
Seward	No report.	Washington	Do.
Sheridan	None.	Wayne	Do.
Sherman	Do.	Webster	Do.
Sioux	Do.	Wheeler	Do.
Stanton	Do.	York	Do.

NEBRASKA.—Ninety counties. Eighty-two counties report no cases of leprosy therein; one case of suspected leprosy is reported in Lancaster County. No report was received from the following seven counties: Boyd, Cuming, Fillmore, Hayes, Saline, Seward, and Thurston.

NEVADA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Churchill	None.	Lincoln	None.
Douglas	Do.	Lyon	One case.
Elko	Do.	Nye	None.
Esmeralda	Do.	Ormsby	Do.
Eureka	Do.	Storey	Do.
Humboldt	Do.	Washoe	Do.
Lander	Do.	White Pine	Do.

NEVADA.—Fourteen counties. Thirteen counties report no cases of leprosy therein. One case of leprosy in Lyon County.

NEW HAMPSHIRE.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Belknap	None.	Hillsboro	None.
Carroll	Do.	Merrimack	Do.
Cheshire	Do.	Rockingham	Do.
Coos	Do.	Strafford	Do.
Grafton	Do.	Sullivan	Do.

NEW HAMPSHIRE.—Ten counties. Reports have been received from all the counties in New Hampshire, and no cases or suspected cases of leprosy are reported.

NEW JERSEY.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Atlantic	None.	Middlesex	No report.
Bergen	Do.	Monmouth	None.
Burlington	Do.	Morris	Do.
Camden	Do.	Ocean	No report.
Cape May	Do.	Passaic	None.
Cumberland	Do.	Salem	Do.
Essex	Do.	Somerset	Do.
Gloucester	Do.	Sussex	Do.
Hudson	Do.	Union	Do.
Hunterdon	Do.	Warren	Do.
Mercer	Do.		

NEW JERSEY.—Twenty-one counties. Nineteen counties report no cases of leprosy therein. Middlesex and Ocean counties do not report.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

NEW MEXICO.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Bernalillo	None.	Rio Arriba	No report.
Chaves	Do.	San Juan	None.
Colfax	Do.	San Miguel	Do.
Donna Ana	Do.	Santa Fe	Do.
Eddy	Do.	Sierra	Do.
Grant	Do.	Socorro	Do.
Guadalupe	No report.	Taos	Do,
Lincoln	None.	Union	No report.
Mora	Do.	Valencia	None.
Otero	Do.		

NEW MEXICO.—Nineteen counties. Reports received from 16 counties indicate the absence of leprosy therein. No report received from the following counties: Guadalupe, Rio Arriba, and Union.

NEW YORK.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Albany	None.	Oneida	None.
Allegany	Do.	Onondaga	Do.
Broome	Do.	Ontario	Do.
Cattaraugus	Do.	Orange	Do.
Cayuga	Do.	Orleans	Do.
Chautauqua	Do.	Oswego	Do.
Chemung	Do.	Otsego	Do.
Chenango	Do.	Putnam	Do.
Clinton	Do.	Queens	Do.
Columbia	Do.	Rensselaer	Do.
Cortland	Do.	Richmond	Do.
Delaware	Do.	Rockland	Do.
Dutchess	Do.	St. Lawrence	Do.
Erie	Do.	Saratoga	Do.
Essex	Do.	Schenectady	Do.
Franklin	Do.	Schoharie	Do.
Fulton	Do.	Schuyler	Do.
Genesee	Do.	Seneca	Do.
Greene	Do.	Steuben	Do.
Hamilton	Do.	Suffolk	Do.
Herkimer	No report.	Sullivan	Do.
Jefferson	None.	Tioga	Do.
Kings	4 cases.	Tompkins	Do.
Lewis	None.	Ulster	Do.
Livingston	Do.	Warren	Do.
Madison	Do.	Washington	Do.
Monroe	Do.	Wayne	No report.
Montgomery	Do.	Westchester	None.
Nassau	Do.	Wyoming	Do.
New York	3 cases.	Yates	Do.
Niagara	None.		

NEW YORK.—Sixty-one counties. Fifty-seven counties report no cases of leprosy. Four cases of the disease are reported in Kings County, and three cases in New York County. Herkimer and Wayne counties do not report.

NORTH CAROLINA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Alamance	None.	Carteret	None.
Alexander	Do.	Caswell	Do.
Alleghany	Do.	Catawba	No report.
Anson	No report.	Chatham	None.
Ashe	None.	Cherokee	Do.
Beaufort	Do.	Chowan	Do.
Bertie	Do.	Clay	Do.
Bladen	Do.	Cleveland	Do.
Brunswick	Do.	Columbus	Do.
Buncombe	Do.	Craven	Do.
Burke	Do.	Cumberland	Do.
Cabarrus	Do.	Currituck	Do.
Caldwell	Do.	Dare	Do.
Camden	No report.	Davidson	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

NORTH CAROLINA—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Davie	None.	Northampton	None.
Duplin	Do.	Onslow	Do.
Durham	Do.	Orange	Do.
Edgecombe	Do.	Pamlico	Do.
Forsyth	Do.	Pasquotank	Do.
Franklin	Do.	Pender	Do.
Gaston	Do.	Perquimans	Do.
Gates	Do.	Person	Do.
Graham	No report.	Pitt	Do.
Granville	None.	Polk	Do.
Greene	Do.	Randolph	Do.
Guilford	Do.	Richmond	No report.
Halifax	Do.	Robeson	None.
Harnett	Do.	Rockingham	Do.
Haywood	No report.	Rowan	No report.
Henderson	None.	Rutherford	None.
Hertford	Do.	Sampson	Do.
Hyde	Do.	Stanly	Do.
Iredell	Do.	Stokes	Do.
Jackson	Do.	Surry	No report.
Johnston	Do.	Swain	None.
Jones	Do.	Transylvania	No report.
Lenoir	Do.	Tyrrell	None.
Lincoln	No report.	Union	Do.
McDowell	None.	Vance	Do.
Macon	Do.	Wake	Do.
Madison	Do.	Warren	Do.
Martin	Do.	Washington	Do.
Mecklenburg	Do.	Watauga	Do.
Mitchell	Do.	Wayne	Do.
Montgomery	Do.	Wilkes	Do.
Moore	Do.	Wilson	Do.
Nash	Do.	Yadkin	Do.
New Hanover	Do.	Yancey	No report.

NORTH CAROLINA.—Ninety-six counties. Eighty-five counties report no cases of leprosy therein. No report was received from the following eleven counties: Anson, Camden, Catawba, Graham, Haywood, Lincoln, Richmond, Rowan, Surry, Transylvania, and Yancey.

NORTH DAKOTA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Barnes	None.	Morton	None.
Benson	Do.	Nelson	Do.
Billings	Do.	Oliver	Do.
Bottineau	Do.	Pembina	6 cases.
Burleigh	1 case.	Pierce	No report.
Cass	None.	Ramsey	Do.
Cavalier	Do.	Ransom	None.
Dickey	Do.	Richland	Do.
Eddy	Do.	Rolette	Do.
Emmons	No report.	Sargent	Do.
Foster	None.	Stark	Do.
Grand Forks	Do.	Steele	Do.
Griggs	Do.	Stutsman	Do.
Kidder	Do.	Towner	No report.
Lamoure	Do.	Traill	None.
Logan	Do,	Walsh	8 cases.
McHenry	Do.	Ward	None.
McIntosh	Do.	Wells	Do.
McLean	Do.	Williams	Do.
Mercer	Do.		

NORTH DAKOTA.—Thirty-nine counties. Thirty-two counties report no cases of leprosy therein. One case of leprosy is reported in Burleigh County, 6 cases in Pembina County, and 8 cases in Walsh County. No report was received from the following counties: Emmons, Pierce, Ramsey, and Towner.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

OHIO.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Adams	None.	Licking	None.
Allen	Do.	Logan	Do.
Ashland	No report.	Lorain	Do.
Ashtabula	None.	Lucas	Do.
Athens	No report.	Madison	Do.
Auglaize	Do.	Mahoning	No report.
Belmont	None.	Marion	Do.
Brown	Do.	Medina	None.
Butler	Do.	Meigs	Do.
Carroll	Do.	Mercer	Do.
Champaign	Do.	Miami	Do.
Clark	Do.	Monroe	Do.
Clermont	Do.	Montgomery	Do.
Clinton	Do.	Morgan	Do.
Columbiana	Do.	Morrow	Do.
Coshocton	Do.	Muskingum	No report.
Crawford	Do.	Noble	None.
Cuyahoga	Do.	Ottawa	No report.
Darke	Do.	Paulding	None.
Defiance	Do.	Perry	1 suspected case.
Delaware	Do.	Pickaway	None.
Erie	Do.	Pike	Do.
Fairfield	Do.	Portage	Do.
Fayette	Do.	Preble	Do.
Franklin	Do.	Putnam	Do.
Fulton	Do.	Richland	Do.
Gallia	Do.	Ross	Do.
Geauga	Do.	Sandusky	Do.
Greene	Do.	Scioto	Do.
Guernsey	Do.	Seneca	Do.
Hamilton	Do.	Shelby	Do.
Hancock	Do.	Stark	Do.
Hardin	Do.	Summit	Do.
Harrison	Do.	Trumbull	Do.
Henry	Do.	Tuscarawas	No report.
Highland	Do.	Union	None.
Hocking	Do.	Van Wert	Do.
Holmes	Do.	Vinton	Do.
Huron	Do.	Warren	Do.
Jackson	Do.	Washington	Do.
Jefferson	Do.	Wayne	Do.
Knox	No report.	Williams	Do.
Lake	None.	Wood	Do.
Lawrence	Do.	Wyandot	Do.

OHIO.—Eighty-eight counties. Seventy-eight counties report no cases of leprosy therein. One case of suspected leprosy is reported in Perry County. The following counties have not reported: Ashland, Athens, Auglaize, Knox, Mahoning, Marion, Muskingum, Ottawa, Tuscarawas.

OKLAHOMA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Beaver	None.	Kiowa and Comanche nations	None.
Blaine	Do.	Lincoln	Do.
Canadian	Do.	Logan	Do.
Cleveland	Do.	Noble	Do.
Custer	Do.	Oklahoma	Do.
Day	Do.	Osage Nation	Do.
Dewey	No report.	Pawnee	Do.
Garfield	None.	Payne	Do.
Grant	Do.	Pottawatomie	Do.
Greer	Do.	Roger Mills	Do.
Kansas Nation	Do.	Washita	Do.
Kay	Do.	Woods	Do.
Kingfisher	No report.	Woodward	Do.

OKLAHOMA.—Twenty-six counties. Twenty-four counties report no cases of leprosy therein. The following counties have not reported: Dewey and Kingfisher.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

OREGON.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Baker	No report.	Lincoln	None.
Benton	None.	Linn	Do.
Clackamas	Do.	Malheur	Do.
Clatsop	Do.	Marion	Do.
Columbia	Do.	Morrow	Do.
Coos	Do.	Multnomah	One case.
Crook	Do.	Polk	No report.
Curry	Do.	Sherman	None.
Douglas	Do.	Tillamook	Do.
Gilliam	Do.	Umatilla	Do.
Grant	Do.	Union	Do.
Harney	Do.	Wallowa	Do.
Jackson	Do.	Wasco	No report.
Josephine	Do.	Washington	None.
Klamath	Do.	Wheeler	Do.
Lake	Do.	Yamhill	No report.
Lane	Do.		

OREGON.—Thirty-three counties. Twenty-eight counties report no cases of leprosy therein. One case of leprosy is reported in Multnomah County. No report was received from the following four counties: Baker, Polk, Wasco, and Yamhill.

PENNSYLVANIA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Adams	None.	Lackawanna	None.
Allegheny	Do.	Lancaster	Do.
Armstrong	Do.	Lawrence	Do.
Beaver	Do.	Lebanon	Do.
Bedford	Do.	Lehigh	Do.
Berks	Do.	Luzerne	Do.
Blair	Do.	Lycoming	Do.
Bradford	Do.	McKean	Do.
Bucks	Do.	Mercer	Do.
Butler	Do.	Mifflin	Do.
Cambria	Do.	Monroe	Do.
Cameron	Do.	Montgomery	Do.
Carbon	Do.	Montour	Do.
Center	Do.	Northampton	Do.
Chester	Do.	Northumberland	Do.
Clarion	Do.	Perry	Do.
Clearfield	Do.	Philadelphia	1 case.
Clinton	Do.	Pike	None.
Columbia	Do.	Potter	Do.
Crawford	Do.	Schuylkill	Do.
Cumberland	Do.	Snyder	Do.
Dauphin	Do.	Somerset	No report.
Delaware	Do.	Sullivan	None.
Elk	Do.	Susquehanna	Do.
Erie	Do.	Tioga	No report.
Fayette	Do.	Union	None.
Forest	Do.	Venango	Do.
Franklin	Do.	Warren	Do.
Fulton	Do.	Washington	Do.
Greene	Do.	Wayne	Do.
Huntingdon	No report.	Westmoreland	Do.
Indiana	None.	Wyoming	Do.
Jefferson	Do.	York	Do.
Juniata	Do.		

PENNSYLVANIA.—Sixty-seven counties. Sixty-three counties report no cases of leprosy therein. One case of leprosy is reported in Philadelphia County. The following counties have not reported: Huntingdon, Somerset, and Tioga.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

RHODE ISLAND.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Bristol	None.	Providence	None.
Kent	Do.	Washington	Do.
Newport	Do.		

RHODE ISLAND.—Five counties. No cases of leprosy reported.

SOUTH CAROLINA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Abbeville	None.	Greenwood	None.
Aiken	Do.	Hampton	Do.
Anderson	Do.	Horry	Do.
Bamberg	Do.	Kershaw	Do.
Barnwell	Do.	Lancaster	Do.
Beaufort	Do.	Laurens	No report.
Berkeley	Do.	Lexington	None.
Charleston	Do.	Marion	Do.
Cherokee	Do.	Marlboro	Do.
Chester	Do.	Newberry	Do.
Chesterfield	Do.	Oconee	Do.
Clarendon	Do.	Orangeburg	Do.
Colleton	Do.	Pickens	Do.
Darlington	Do.	Richland	No report.
Dorchester	Do.	Saluda	None.
Edgefield	Do.	Spartanburg	Do.
Fairfield	Do.	Sumter	Do.
Florence	No report.	Union	No report.
Georgetown	None.	Williamsburg	None.
Greenville	No report.	York	Do.

SOUTH CAROLINA.—Forty counties. Thirty-five counties report no cases of leprosy therein. Cases of leprosy have existed in Charleston County, but reports received indicate the absence of the disease in that county at the present time. The following counties have not reported: Florence, Greenville, Laurens, Richland, and Union.

SOUTH DAKOTA.

County.	Cases of leprosy. reported.	County.	Cases of leprosy reported.
Aurora	None.	Hughes	None.
Beadle	Do.	Hutchinson	Do.
Bonhomme	No report.	Hyde	Do.
Boreman	Do.	Jackson	Do.
Brookings	None.	Jerauld	Do.
Brown	Do.	Kingsbury	No report.
Brule	Do.	Lake	None.
Buffalo	Do.	Lawrence	Do.
Butte	Do.	Lincoln	Do.
Campbelll	Do.	Lyman	No report.
Charles Mix	Do.	McCook	None.
Choteau	No report.	McPherson	Do.
Clark	None.	Marshall	Do.
Clay	No report.	Meade	Do.
Codington	None.	Meyer	Do.
Custer	Do.	Miner	No report.
Davison	Do.	Minnehaha	None.
Day	1 case.	Moody	Do.
Deuel	None.	Nowlin	No report.
Dewey	Do.	Pennington	None.
Douglas	Do.	Potter	Do.
Edmunds	Do.	Pratt	No report.
Ewing	No report.	Presho	Do.
Fall River	None.	Roberts	None.
Faulk	No report.	Sanborn	Do.
Grant	None.	Scobey	No report.
Gregory	Do.	Shannon	None.
Hamlin	Do.	Spink	Do.
Hand	No report.	Stanley	Do.
Hanson	None.	Sterling	Do.
Harding	Do.	Sully	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

SOUTH DAKOTA—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Turner	None.	Washabaugh	None.
Union	Do.	Yankton	Do.
Wagner	No report.	Ziebach	No report.
Walworth	None.		

SOUTH DAKOTA.—Sixty-nine counties. Fifty-two counties report no cases of leprosy therein. One case of leprosy reported in Day County. The following counties have not reported: Bonhomme, Boreman, Choteau, Clay, Ewing, Faulk, Hand, Kingsbury, Lyman, Miner, Nowlin, Pratt, Presho, Scobey, Wagner, and Ziebach.

TENNESSEE.

County.	Cases of leprosy reported.	County.	Cases of leprosy, reported.
Anderson	None.	Lake	None.
Bedford	No report.	Lauderdale	Do.
Benton	None.	Lawrence	Do.
Bledsoe	Do.	Lewis	Do.
Blount	Do.	Lincoln	Do.
Bradley	Do.	Loudon	Do.
Campbell	Do.	McMinn	Do.
Cannon	Do.	McNairy	Do.
Carroll	Do.	Macon	No report.
Carter	Do.	Madison	None.
Cheatham	Do.	Marion	Do.
Chester	Do.	Marshall	Do.
Claiborne	No report.	Maury	Do.
Clay	None.	Meigs	Do.
Cocke	Do.	Monroe	Do.
Coffee	Do.	Montgomery	Do.
Crockett	Do.	Moore	Do.
Cumberland	Do.	Morgan	Do.
Davidson	Do.	Obion	Do.
Decatur	Do.	Overton	Do.
Dekalb	Do.	Perry	Do.
Dickson	Do.	Pickett	Do.
Dyer	No report.	Polk	Do.
Fayette	None.	Putnam	Do.
Fentress	Do.	Rhea	Do.
Franklin	Do.	Roane	Do.
Gibson	Do.	Robertson	Do.
Giles	Do.	Rutherford	Do.
Grainger	Do.	Scott	Do.
Greene	Do.	Sequatchie	Do.
Grundy	Do.	Sevier	Do.
Hamblen	Do.	Shelby	Do.
Hamilton	Do.	Smith	No report.
Hancock	Do.	Stewart	None.
Hardeman	Do.	Sullivan	Do.
Hardin	No report.	Sumner	Do.
Hawkins	None.	Tipton	Do.
Haywood	Do.	Trousdale	Do.
Henderson	Do.	Unicoi	Do.
Henry	No report.	Union	No report.
Hickman	None.	Van Buren	None.
Houston	Do.	Warren	Do.
Humphreys	Do.	Washington	Do.
Jackson	Do.	Wayne	No report.
James	Do.	Weakley	None.
Jefferson	Do.	White	Do.
Johnson	Do.	Williamson	Do.
Knox	No report.	Wilson	Do.

TENNESSEE.—Ninety-six counties. Eighty-six counties report no cases of leprosy therein. No report was received from the following counties: Bedford, Claiborne, Dyer, Hardin, Henry, Knox, Macon, Smith, Union, and Wayne.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

TEXAS.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Anderson	None.	Goliad	None.
Angelina	Do.	Gonzales	Do.
Aransas	Do.	Gray	Do.
Archer	Do.	Grayson	Do.
Armstrong	Do.	Gregg	Do.
Atascosa	Do.	Grimes	Do.
Austin	Do.	Guadalupe	Do.
Bandera	Do.	Hale	Do.
Bastrop	Do.	Hall	Do.
Baylor	Do.	Hamilton	Do.
Bee	Do.	Hansford	Do.
Bell	Do.	Hardeman	Do.
Bexar	Do.	Hardin	Do.
Blanco	Do.	Harris	Do.
Borden	Do.	Harrison	Do.
Bosque	Do.	Hartley	Do.
Bowie	Do.	Haskell	Do.
Brazoria	Do.	Hays	Do.
Brazos	Do.	Hemphill	Do.
Brewster	Do.	Henderson	Do.
Briscoe	Do.	Hidalgo	Do.
Brown	Do.	Hill	Do.
Burleson	Do.	Hood	Do.
Burnet	Do.	Hopkins	Do.
Caldwell	No report.	Houston	Do.
Calhoun	None.	Howard	Do.
Callahan	Do.	Hunt	Do.
Cameron	Do.	Hutchinson	Do.
Camp	Do.	Irion	Do.
Carson	Do.	Jack	Do.
Cass	Do.	Jackson	No report.
Castro	Do.	Jasper	None.
Chambers	Do.	Jeff Davis	Do.
Cherokee	Do.	Jefferson	Do.
Childress	Do.	Johnson	Do.
Clay	Do.	Jones	Do.
Coke	Do.	Karnes	Do.
Coleman	Do.	Kaufman	Do.
Collin	Do.	Kendall	Do.
Collingsworth	Do.	Kent	Do.
Colorado	Do.	Kerr	Do.
Comal	Do.	Kimble	Do.
Comanche	Do.	King	Do.
Concho	Do.	Kinney	Do.
Cooke	No report.	Knox	Do.
Coryell	None.	Lamar	Do.
Cottle	Do.	Lampasas	Do.
Crockett	Do.	Lasalle	Do.
Crosby	Do.	Lavaca	Do.
Dallam	Do.	Lee	Do.
Dallas	Do.	Leon	Do.
Dawson	No report.	Liberty	Do.
Deaf Smith	None.	Limestone	Do.
Delta	Do.	Lipscomb	Do.
Denton	Do.	Liveoak	Do.
Dewitt	Do.	Llano	Do.
Dickens	Do.	Lubbock	Do.
Dimmit	Do.	Lynn	No report.
Donley	Do.	McCulloch	None.
Duval	Do.	McLennan	Do.
Eastland	Do.	McMullen	Do.
Ector	Do.	Madison	Do.
Edwards	Do.	Marion	Do.
Ellis	Do.	Martin	Do.
El Paso	Do.	Mason	Do.
Erath	Do.	Matagorda	No report.
Falls	Do.	Maverick	1 case.
Fannin	Do.	Medina	None.
Fayette	Do.	Menard	Do.
Fisher	Do.	Midland	Do.
Floyd	Do.	Milan	Do.
Foard	Do.	Mills	Do.
Fort Bend	Do.	Mitchell	Do.
Franklin	Do.	Montague	Do.
Freestone	Do.	Montgomery	Do.
Frio	Do.	Moore	Do.
Galveston	Two cases.	Morris	Do.
Gillespie	None.	Motley	Do.
Glasscock	Do.	Nacogdoches	Do.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

TEXAS—Continued.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Navarro	None.	Somervell	No report.
Newton	Do.	Starr	None.
Nolan	Do.	Stephens	No report.
Nueces	Do.	Sterling	None.
Ochiltree	Do.	Stonewall	Do.
Oldham	Do.	Sutton	Do.
Orange	Do.	Swisher	Do.
Palo Pinto	Do.	Tarrant	Do.
Panola	Do.	Taylor	Do.
Parker	Do.	Throckmorton	Do.
Parmer	No report.	Titus	Do.
Pecos	None.	Tom Green	Do.
Polk	Do.	Travis	Do.
Potter	Do.	Trinity	Do.
Presidio	No report.	Tyler	Do.
Rains	None.	Upshur	No report.
Randall	Do.	Uvalde	None.
Red River	Do.	Valverde	Do.
Reeves	Do.	Van Zandt	Do.
Refugio	Do.	Victoria	Do.
Roberts	Do.	Walker	Do.
Robertson	Do.	Waller	Do.
Rockwall	None.	Ward	Do.
Runnels	No report.	Washington	Do.
Rusk	None.	Webb	Do.
Sabine	Do.	Wharton	Do.
San Augustine	Do.	Wheeler	Do.
San Jacinto	Do.	Wichita	Do.
San Patricio	Do.	Wilbarger	Do.
San Saba	Do.	Williamson	Do.
Schleicher	Do.	Wilson	Do.
Scurry	Do.	Wise	Do.
Shackelford	Do.	Wood	Do.
Shelby	Do.	Young	No report.
Sherman	Do.	Zapata	None.
Smith	No report.	Zavalla	Do.

NOTE.—Only those counties having a post-office are listed above.

TEXAS.—Two hundred and thirty counties. Two hundred and fourteen counties report no cases of leprosy therein. Two cases of leprosy are reported in Galveston County and one case in Maverick County. The following fourteen counties failed to make a report: Caldwell, Cooke, Dawson, Jackson, Lynn, Matagorda, Parmer, Presidio, Runnels, Smith, Somervell, Stephens, Upshur, and Young.

UTAH.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Beaver	None.	Rich	None.
Boxelder	Do.	Salt Lake	No report.
Cache	Do.	San Juan	None.
Carbon	No report.	Sanpete	Do.
Davis	None.	Sevier	Do.
Emery	Do.	Summit	Do.
Garfield	Do.	Tooele	Do.
Grand	Do.	Uinta	Do.
Iron	Do.	Utah	Do.
Juab	Do.	Wasatch	Do.
Kane	Do.	Washington	Do.
Millard	Do.	Wayne	Do.
Morgan	Do.	Weber	Do.
Piute	Do.		

UTAH.—Twenty-seven counties. Twenty-five counties report no cases of leprosy therein. No report received from Carbon and Salt Lake counties. Several cases of leprosy have existed in Tooele County among a settlement of Kanakas at Skull Valley, but present reports indicate that all of these cases are now dead and no cases of the disease exist in that locality at this time.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

VERMONT.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Addison	None.	Lamoille	No report.
Bennington	Do.	Orange	None.
Caledonia	Do.	Orleans	Do.
Chittenden	Do.	Rutland	Do.
Essex	Do.	Washington	Do.
Franklin	Do.	Windham	Do.
Grand Isle	Do.	Windsor	Do.

VERMONT.—Fourteen counties. Thirteen counties report no cases of leprosy therein. No report received from Lamoille County.

VIRGINIA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Accomac	None.	King William	None.
Albemarle	Do.	Lancaster	Do.
Alexandria	Do.	Lee	Do.
Alleghany	Do.	Loudoun	Do.
Amelia	Do.	Louisa	Do.
Amherst	Do.	Lunenburg	Do.
Appomattox	Do.	Madison	No report.
Augusta	Do.	Mathews	None.
Bath	Do.	Mecklenburg	Do.
Bedford	Do.	Middlesex	Do.
Bland	Do.	Montgomery	None.
Botetourt	Do.	Nansemond	Do.
Brunswick	Do.	Nelson	Do.
Buchanan	Do.	New Kent	Do.
Buckingham	Do.	Norfolk	Do.
Campbell	Do.	Northampton	Do.
Caroline	Do.	Northumberland	Do.
Carroll	Do.	Nottoway	Do.
Charles City	Do.	Orange	Do.
Charlotte	No report.	Page	Do.
Chesterfield	None.	Patrick	Do.
Clarke	Do.	Pittsylvania	Do.
Craig	Do.	Powhatan	Do.
Culpeper	Do.	Prince Edward	Do.
Cumberland	Do.	Prince George	Do,
Dickenson	Do.	Princess Anne	Do.
Dinwiddie	Do.	Prince William	Do.
Elizabeth City	Do.	Pulaski	Do.
Essex	No report.	Rappahannock	Do.
Fairfax	None.	Richmond	Do.
Fauquier	Do.	Roanoke	No report.
Floyd	Do.	Rockbridge	None.
Fluvanna	Do.	Rockingham	Do.
Franklin	Do.	Russell	Do.
Frederick	Do.	Scott	Do.
Giles	Do.	Shenandoah	Do.
Gloucester	Do.	Smyth	Do.
Goochland	No report.	Southampton	Do.
Grayson	None.	Spottsylvania	Do.
Greene	Do.	Stafford	Do.
Greenesville	Do.	Surry	Do.
Halifax	No report.	Sussex	Do.
Hanover	Do.	Tazewell	Do.
Henrico	None.	Warren	Do.
Henry	Do.	Warwick	Do.
Highland	Do.	Washington	Do.
Isle of Wight	Do.	Westmoreland	Do.
James City	Do.	Wise	Do.
King and Queen	Do.	Wythe	Do.
King George	Do.	York	Do.

VIRGINIA.—One hundred counties. Ninety-three counties report no cases of leprosy therein. No report was received from the following seven counties: Charlotte, Essex, Goochland, Halifax, Hanover, Madison, and Roanoke.

TABLE No. 2.—*List of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

WASHINGTON.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Adams	No report.	Lincoln	None.
Asotin	None.	Mason	Do.
Chehalis	Do.	Okanogan	Do.
Clallam	Do.	Pacific	Do.
Clarke	Do.	Pierce	Do.
Columbia	Do.	San Juan	Do.
Cowlitz	Do.	Skagit	Do.
Douglas	Do.	Skamania	Do.
Ferry	Do.	Snohomish	Do.
Franklin	Do.	Spokane	Do.
Garfield	Do.	Stevens	Do.
Island	Do.	Thurston	Do.
Jefferson	Do.	Wahkiakum	No report.
King	Do.	Wallawalla	Do.
Kitsap	Do.	Whatcom	Do.
Kittitas	Do.	Whitman	None.
Klickitat	Do.	Yakima	No report.
Lewis	Do.		

WASHINGTON.—Thirty-five counties. Thirty counties report no cases of leprosy therein. No report was received from the following five counties: Adams, Wahkiakum, Wallawalla, Whatcom, and Yakima.

WEST VIRGINIA.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Barbour	None.	Mineral	No report.
Berkeley	Do.	Mingo	Do.
Boone	Do.	Monongalia	None.
Braxton	Do.	Monroe	Do.
Brooke	Do.	Morgan	Do.
Cabell	Do.	Nicholas	Do.
Calhoun	Do.	Ohio	Do.
Clay	Do.	Pendleton	Do.
Doddridge	Do.	Pleasants	Do.
Fayette	Do.	Pocahontas	Do.
Gilmer	Do.	Preston	Do.
Grant	Do.	Putnam	Do.
Greenbrier	Do.	Raleigh	Do.
Hampshire	Do.	Randolph	Do.
Hancock	Do.	Ritchie	No report.
Hardy	Do.	Roane	None.
Harrison	Do.	Summers	Do.
Jackson	Do.	Taylor	No report.
Jefferson	No report.	Tucker	None.
Kanawha	None.	Tyler	Do.
Lewis	Do.	Upshur	Do.
Lincoln	Do.	Wayne	No report.
Logan	No report.	Webster	None.
McDowell	None.	Wetzel	Do.
Marion	No report.	Wirt	Do.
Marshall	None.	Wood	Do.
Mason	Do.	Wyoming	Do.
Mercer	Do.		

WEST VIRGINIA—Fifty-five counties. Forty-seven counties report no cases of leprosy therein. The following eight counties have not reported: Jefferson, Logan, Marion, Mineral, Mingo, Ritchie, Taylor, and Wayne.

TABLE NO. 2.—*Lists of States, arranged alphabetically, showing the presence or absence of leprosy in each county*—Continued.

WISCONSIN.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Adams	None.	Manitowoc	None.
Ashland	Do.	Marathon	Do.
Barron	1 case.	Marinette	Do.
Bayfield	None.	Marquette	Do.
Brown	Do.	Milwaukee	Do.
Buffalo	Do.	Monroe	Do.
Burnett	Do.	Oconto	Do.
Calumet	Do.	Oneida	Do.
Chippewa	Do.	Outagamie	Do.
Clark	No report.	Ozaukee	Do.
Columbia	None.	Pepin	Do.
Crawford	Do.	Pierce	Do.
Dane	1 case.	Polk	Do.
Dodge	None.	Portage	Do.
Door	Do.	Price	Do.
Douglas	Do.	Racine	Do.
Dunn	Do.	Richland	Do.
Eau Claire	No report.	Rock	Do.
Florence	None.	Saint Croix	Do.
Fond du Lac	Do.	Sauk	Do.
Forest	Do.	Sawyer	Do.
Grant	Do.	Shawano	Do.
Green	Do.	Sheboygan	Do.
Green Lake	Do.	Taylor	Do.
Iowa	Do.	Trempealeau	Do.
Iron	Do.	Vernon	Do.
Jackson	Do.	Vilas	Do.
Jefferson	Do.	Walworth	Do.
Juneau	Do.	Washburn	Do.
Kenosha	Do.	Washington	Do.
Kewaunee	Do.	Waukesha	Do.
La Crosse	Do.	Waupaca	Do.
Lafayette	Do.	Waushara	Do.
Langdale	Do.	Winnebago	Do.
Lincoln	Do.	Wood	Do.

WISCONSIN.—Seventy counties. Sixty-six counties report no cases of leprosy therein. One case of leprosy is reported in Barron County and one case in Dane County. Another case of leprosy is reported in Wisconsin, but not definitely located. No report was received from Clark and Eau Claire counties.

WYOMING.

County.	Cases of leprosy reported.	County.	Cases of leprosy reported.
Albany	None.	Laramie	None.
Bighorn	Do.	Natrona	Do.
Carbon	Do.	Sheridan	Do.
Converse	Do.	Sweetwater	Do.
Crook	Do.	Uinta	Do.
Fremont	Do.	Weston	Do.
Johnson	Do.		

WYOMING.—Thirteen counties. Reports indicate that no cases of leprosy exist in Wyoming, all the counties having reported no cases therein.

TABLE No. 3.—*Summary.*

State.	Number of cases.	Males.	Females.	American born.	Foreign born.	Disease contracted in United States.	Disease contracted outside United States.	Isolated.	At large.	Anesthetic.	Tubercular.	Mixed.	Trophic.	Mutilating.
Alabama	1	1	.....	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....
California	24	19	5	5	19	11	11	17	7	6	17	1	.....	.....
Florida	24	17	7	5	18	19	.....	.....	24	23	.....	.....	.....	.....
Georgia	1	.....	1	1	.....	1	.....	.....	1	1	.....	.....	.....	.....
Illinois	5	5	.....	1	4	1	4	.....	5	.....	2	1	.....	.....
Iowa	1	.....	1	.....	1	.....	1	.....	1	.....	1	.....	.....	.....
Louisiana	155	84	71	119	24	140	1	38	117	56	33	48	9	1
Maryland	1	.....	1	1	.....	1	.....	.....	1	.....	.....	1	.....	.....
Massachusetts	2	2	.....	1	1	.....	1	1	1	.....	2	.....	.....	.....
Minnesota	20	18	2	.....	20	.....	20	6	14	8	10	1	.....	.....
Mississippi	5	3	2	5	.....	5	.....	2	3	2	3	.....	.....	.....
Missouri	5	3	2	3	2	2	2	1	4	2	3	.....	.....	.....
Montana	1	1	.....	.....	1	.....	1	.....	1	1	.....	.....	.....	.....
Nevada	1	1	.....	.....	1	1	.....	.....	1	1	.....	.....	.....	.....
New York	7	7	.....	1	6	2	4	.....	7	4	1	1	.....	.....
North Dakota	16	10	6	.....	16	.....	16	4	12	2	11	.....	.....	.....
Oregon	1	1	.....	.....	1	.....	1	.....	.....	.....	1	.....	.....	.....
Pennsylvania	1	.....	1	1	.....	1	.....	1	.....	.....	.....	1	.....	.....
South Dakota	1	1	.....	.....	1	.....	1	1	.....	.....	1	.....	.....	.....
Texas	3	2	1	1	2	1	2	1	2	.....	1	2	.....	.....
Wisconsin	3	1	2	.....	3	.....	3	.....	3	1	2	.....	.....	.....
Total	278	176	102	145	120	186	68	72	205	107	88	56	9	1

TABLE No. 4.—*Nationalities represented in cases of leprosy reported.*

American	145	Mexican	3
Norwegian	22	Italian	3
Chinese	20	Kanaka	1
German	12	Greek	1
Bahamian	12	Australian	1
Icelander	11	Spanish	1
Swede	8	Japanese	1
Irish	6	Sicilian	1
Cuban	6	Tahitian	1
West Indian	4	Unknown	13
English	3		
French	3	Total	278

RECAPITULATION.

Number of States in which leprosy exists	21
Number of cases leprosy reported	278
Number of males	176
Number of females	102
Number born in United States	145
Number foreign born	120
Number birthplace unknown	13
Number who probably contracted disease in United States	186
Number who probably contracted disease outside United States	68
Number place of contracting disease unknown	24
Number of cases isolated	72
Number of cases at large	205
Number of cases in doubt as to isolation	1
Number of cases of—	
Anesthetic leprosy	107
Tubercular leprosy	88
Mixed leprosy	56
Trophic leprosy	9
Mutilating leprosy	1
Doubtful diagnosis as to type	15

REPORT OF THE SECRETARIES OF THE INTERNATIONAL LEPROSY CONFERENCE, BERLIN, 1897.

At the close of the debates of the International Leprosy Conference, Berlin, 1897, the secretaries have the honor to present the following report of the general conclusions of the conference:

They believe that such a résumé will be especially desirable for those members who have been delegated by their respective governments, and who have to make reports on the results of the conference.

As might be expected, a considerable portion of the discussion has related to the bacillus Leprae, which the conference accepts as the virus of leprosy, and which for upward of twenty-five years has been known to the scientific world through the important discovery of Hansen and the able investigations of Neisser.

The conditions under which the bacillus grows and develops are still unknown, as well as the way of its invasion into the human system, but from the discussions of the conference, it seems probable that a unanimity of opinion will soon prevail in reference to its modes of subsequent dissemination within the human body.

Very interesting observations have been brought forward in connection with the elimination of the bacilli in large quantities by means of the skin and the nasal and buccal mucous membrances of lepers; it is desired that such observations be confirmed where opportunities occur.

The question is of great importance to those who are intrusted with the care of the public health, as leprosy is now acknowledged to be a contagious disease.

Every leper is a danger to his surroundings, the danger varying with the nature and extent of his relations therewith, and also with the sanitary conditions under which he lives.

Although among the lower classes every leper is especially dangerous to his family and fellow-workers, cases of leprosy frequently appear in the higher social circles.

The theory of heredity of leprosy is now further shown to have lost ground in comparison with the at present generally accepted theory of its contagiousness.

The treatment of leprosy has only had palliative results up to the present time.

Serum therapy has so far been unsuccessful.

In view of the virtual incurability of leprosy and the serious and detrimental effects which its existence in a community causes, and considering the good results which have followed the adoption of legal measures of isolation in Norway, the Leprosy Conference, as a logical

issue of the theory that the disease is contagious, has adopted the following resolution proposed by Dr. Hansen and amended by Dr. Besnier:

1. In such countries where leprosy forms foci or has a great extension we have in isolation the best means of preventing the spread of the disease.

2. The system of obligatory notification of observation and isolation as carried out in Norway is recommended to all nations with local self-government and a sufficient number of physicians.

3. It should be left to the legal authorities, after consultation with the medical authorities, to take such measures as are applicable to the special social conditions of the districts.

PHIN. S. ABRAHAM, *London*,
A. VON GERGMANN, *Riga*,
J. J. KINYOUN, *Washington*,
EDV. EHLERS, *Copenhagen, General Secretary*,
ED. ARNING, *Hamburg*,
E. DUBOIS-HAVENITH, *Bruxelles*,
G. THIBIERGE, *Paris*,
Secretaries of the Conference.

SUGGESTIONS AS TO LEPROSARIA.

By H. M. BRACKEN, M. D.,
Secretary State Board of Health, St. Paul, Minn.

It would seem to me that there should be two or more national leprosaria. One for the accommodation of tropical or semitropical people; another for the accommodation of more northern people, such as Icelanders and Scandinavians. It would be unreasonable to take the people of northern climates into a prolonged or continuous hot climate; on the other hand, it would be unreasonable to take those accustomed to a tropical climate to the cold, rigorous temperature of the Northern, dry States, such as Minnesota or the Dakotas.

In my opinion a dry climate is most conducive to the suppression of leprosy, as demonstrated by the experience in Minnesota. It might be well to say, as bearing that out, that in no instance has there been found an American-born leper in Minnesota, and those that have come in are gradually dying out; on the other hand, Louisiana has a large number of native-born lepers, as stated in Dr. Dyer's article.

[Reprinted from the Philadelphia Medical Journal, December 17, 1898.]

LEPROSY IN MINNESOTA.

By H. M. Bracken, M. D.,
Of Minneapolis, Minn.

In Allbutt's System of Medicine (Vol. III, p. 46), referring to the Norwegian lepers of Minnesota, Wisconsin, and Dakota, it is stated that these have diminished from 160 known cases to about a dozen. This statement is undoubtedly taken from the report of Dr. G. A. Hansen, of Bergen, Norway (1888), who says:

> Of about 160 lepers who have immigrated into three States (Wisconsin, Iowa, Minnesota) 13 are alive, whom I have seen myself, and, perhaps, 3 or 4 more. All the others are dead.

This statement refers to the known lepers that left Norway and settled in the Northwestern States. In another place Dr. Hansen says:

> The number of immigrated lepers from Norway is much greater than I had any idea of from the knowledge I could gather at home. My friends, Dr. Hoegh and Dr. Gronvold, have given me the names of many lepers here in America whom we did not know to be lepers when they left Norway.

The figures quoted from Allbutt's System refer, therefore, to those only who were known to be leprous when they left Norway, and are hence misleading as well as incorrect. In 1886 the Minnesota State board of health first reported upon the lepers of the State. An attempt has been made since that date, and I think with fair success, to keep a record of all the lepers in the State.

The table herewith given will serve as an interesting text.

We have knowledge of 51 lepers having resided in Minnesota. Of these, 17 had died before 1890. Of the 34 added to the records since 1890, 18 were first reported upon in 1891, 2 in 1892, 3 in 1893, 2 in 1894, 2 in 1897, and 7 in 1898 up to September 15. Little is known of the nationality of the 17 that died before 1890, but from various reports it is safe to assume they were all from Norway. Of the later 34, 29 were probably from Norway and 5 from Sweden. Of the 5 from Sweden, 1 was reported first in 1894; the other 4 in 1898.

Of those who might have belonged to the 160 known lepers that immigrated from Norway previously to 1888, this list can not include more than 17. There is a possible total of 29 cases in which the disease first appeared in the old country, but it is not at all probable that more than 22 of these were included in Dr. Hansen's list of 160.

Undoubtedly, some of those who have reported the disease as first appearing after they had landed in this country have not told the truth. It would be fair, probably, to say that 25 of the 51 Minnesota lepers had the disease before leaving Europe.

Twenty-one is probably the highest number of lepers known to have been living in Minnesota in any one year (1893). At present 13 are known to be living in the State. There may possibly be 3 more living, from whom we can secure no reports at present, and, in addition, a few unrecorded cases.

Of these 51 known cases, but 9 were in females. Of the latest record (34 cases) 21 are known to have been married (15 men and 6 women), and 20 of these married lepers had children. It is quite possible that the other one (a woman) had childen also. These 21 married lepers had from 1 to 8 children each. We have knowledge of at least 78 children born to these lepers. It is not known how many children were born after the parents were recognized as leprous, but it is safe to say a large proportion of the 78. Not one of these 78 children has become leprous, and in no case has the leper transmitted the disease to the companion in wedlock. Twenty of the 51 lepers are said to have the anesthetic form of the disease, 23 the tubercular, while for 8 the type of disease is not given.

Of the 13 lepers known to be living, I can give an outline of the present condition of but 6, as follows:

No. 43.—Mrs. D. was born in Nysaaken Varmlandslau, Sweden. There is no history of leprosy in her family. Her husband, a Norwegian, states that the newspapers have reported a case, or cases, of leprosy near her home in Sweden since she left there. She landed in America (Philadelphia) in 1887, and was married in the fall of the same year at Warren, Minn. The first symptoms of leprosy appeared soon after the birth of her second child, in 1891. There was then swelling of the hands, feet, and face. On March 24, 1898, inspection showed the following conditions: The hands and feet were blue, nodular and swollen, the face "leonine," the hair falling out rapidly, the eyebrows gone. There was sore throat, and anesthetic spots were present on the extremities and the face. There were sores on her legs and arms from blows and burns, due to the anesthetic condition of those parts. She had 4 children; 2 born before the first symptoms of leprosy and 2 since. These were all healthy, and were aged respectively 9, 6, 4, and 2 years. The patient was careful and cleanly in her habits. She burned all bandages used, and had her own special towels, bedding, etc. She slept alone. The disease seemed to be rapidly progressing.

No. 45.—Mr. B., 55 years old, was born in Romsdal, Norway. He gives no history of leprosy in his family, but states that there were lepers near his native home. He landed in America (New York) in 1872. The first symptoms of leprosy appeared in 1874. These were anesthesia in both hands, preceded by severe pains. The ears are slightly nodular. The disease is not progressing rapidly. There is

mutilation of the fingers. The patient is not married. His habits are good.

No. 46. Mr. E., 37 years old, was born in Vermland, Sweden. When 20 years of age (1861) he worked on a log-drive in Sweden with Norwegians. There is no history of leprosy in his family. He came to America in 1884, married in 1885, and has 2 children, aged respectively 11 and 8 years, both in good health. In 1892 nodules first appeared on the forehead and back. In 1893 the face became involved. The disease is progressing, but the patient is still able to follow his occupation as a tailor. He is careful in his habits.

No. 47. Mr. L., 40 years old, was born in Helsingland, Sweden. He knows of no leprous relations. He landed in America (Boston) in 1881. About 1888 anesthesia appeared in the feet. The patient is married, and has 5 children (girls), ranging from 16 to 8 years of age, all healthy.

No. 49. Mrs. P., 53 years old, was born in Vermland, Sweden, 25 miles from Stockholm. She knows of no leprous relatives or neighbors. About twenty-five years ago she landed in America (Montreal). About twelve years ago she first noticed severe pains in the lower limbs. At present (1898) her hands, feet, and face show marked evidence of the disease. She has had 6 children, 4 of whom are dead. The two living are aged about 16 and 12, both girls, and are healthy and rugged looking. The patient is not cleanly in her habits, and if the family escapes infection it will not be due to any precautions taken by her. Her husband fears the disease, and this fear may lead him and his children to protect themselves so far as possible.

No. 51.—Mr. J., 55 years old, was born in Norway. He has a brother in the leper hospital in Bergen, Norway. He came to America about twenty years ago and first noticed symptoms of the disease about seven years ago. He is married and has 8 children, all healthy.

The history of these six cases gives some idea of the type of leprosy found in Minnesota. It is undoubtedly possible to find such cases wherever people from the Scandinavian Peninsula have settled in the States or Canada. It is difficult to secure a clear history of the course of the disease.

Let me draw attention to a few facts emphasized by this table and these records:

(1) The impression that leprous immigrants from the Scandinavian Peninsula are all from Norway is a wrong one. Five of 11 lepers placed on file by our board during 1897 and 1898 are from Sweden.

(2) The feeling that we can quarantine against lepers by watching immigrants is an unsafe one. The family history of all immigrants from a country where leprosy prevails should be secured before they are allowed to embark for America, and no member of a leprous family should be permitted to land upon our shores.

(3) It would appear that the conditions antagonistic to the spread of leprosy in Minnesota are also opposed to sterility, as borne out by the families of several of our lepers. (Some of these have children, as shown by the following figures: 5, 5, 6, 6, 4, 6, 4, 5, 8.)

(4) It is quite possible for leprosy to die out in certain favored sections of the country, such as Minnesota, without segregation, provided the importation of lepers be discontinued.

(5) Even in Minnesota, one has but to visit some of these lepers to feel that segregation should be insisted upon in all cases. One can not but feel on entering a filthy home and seeing a leprous mother careless in her habits that the children are not safe.

(6) Segregation in single States is not practical. It would tend simply to drive lepers from States enforcing such practice to those that were not carrying out the system.

(7) A Federal home should be provided for these unfortunates. They could thus be cared for more economically and more satisfactorily than through any State provision.

(8) In spite of all precautions that we may take, there will be some leprous individuals in this part of the world for many years to come.

(9) The Scandinavian Peninsula does not furnish all leprous individuals found in the United States.

Finally, great care must be exercised in dealing with lepers in the future. That we have been constantly importing leprosy is a recognized fact. That the chances of importing it will probably be increased rather than diminished unless great care is taken in dealing with infected countries, no one can doubt. All the lepers that come to America do not settle in the Northwestern States, and all sections of the country may not be so fortunate in affording such poor soil for the spread of the disease as does Minnesota.

It is altogether probable that there are some lepers in Minnesota that are not registered by the State board of health. Assuming that there may be a total of 20 lepers in Minnesota, it is a safe estimate, based on the United States census for 1890 of the Scandinavian foreign-born population, that there are at least 20 lepers in the four States—Wisconsin, Iowa, South Dakota, and North Dakota—and probably 120 Scandinavian lepers in other parts of the United States, making a probable total of 160 Scandinavian lepers in the United States. Basing our estimate on what is positively known to exist in Minnesota, the figures for the three divisions given would be approximately 13, 13, 78, or a total for the United States of 104 Scandinavian lepers. If we base our estimates on the Norwegian foreign-born population in the United States, we should then have for the three districts a total of probably 91 Norwegian lepers.

No.	Nationality.	Disease appeared after coming to America.	Date of—		Age.	Sex.	Social state.	Number of children.
			Birth.	Death.				
1	.....	[a].....	1831	1880	.....	M.	.....	.....
2	.....	10 years.....	1822	1878	.....	M.	.....	.....
3	.....	1 year.....	1843	1878	.....	M.	.....	.....
4	.....	10 years.....	1846	1876	.....	M.	.....	.....
5	.....	3 years.....	1848	1878	.....	M.	.....	.....
6	.....	[a].....	1815	1877	.....	M.	.....	.....
7	.....	[a].....	1848	1868	.....	M.	.....	.....
8	.....	9 years.....	1825	1885	.....	M.	.....	.....
9	.....	.....do	1854	1885	.....	F.	.....	.....
10	.....	5 years.....	1839	1884	.....	M.	.....	.....
11	.....	7 years.....	1853	1886	.....	M.	.....	.....
12	.....	.....	[b]	1888	.....	M.	Married ..	.....
13	.....	.....	[c]	1888	.....	M.	.....	.....
14	.....	.....	[d]	1889	.....	M.	Married ..	.....
15	.....	.....	[e]	1889	.....	M.	Single	.....
16	.....	[a].....	1849	1890	.....	M.	Married ..	.....
17	.....	[a].....	1842	1890	.....	M.	.....do	.....
18	Norwegian.....	7 years.....	1816	1895	.....	M.	.....do	5
19	Norwegian.....	.....	1854	1892	.....	M.	Single	.....
20	.....	[a].....	1830	.....	68	M.	Married ..	1
21	.....	[a].....	1840	1896	.....	M.	Single	.....
22	.....	[a].....	1848	1896	.....	M.	Married ..	5
23	.....	[a].....	1820	.....	78	M.	.....	.....
24	.....	20 years	1834	.....	64	M.	Married ..	6
25	Norwegian.....	9 years	1857	1894	.....	M.	Married ..	3
26	.....	[a].....	1838	189–	.....	M.	Married ..	2
27	.....	[a].....	1840	.....	58	F.	Married ..	6
28	Norwegian.....	[a].....	1843	1897	.....	M.	Married ..	3
29	.....	3 years	1864	1899	34	M.	.....	.....
30	Norwegian.....	[a].....	1850	189–	.....	M.	Married ..	Some.
31	.....	4 years	1850	1892	.....	F.	Married ..	.....
32	.....	19 years	1826	.....	72	M.	Single	.....
33	.....	17 years	.....	189–	.....	F.	Married ..	4
34	.....	[a].....	1871	189–	.....	F.	Single	1
35	Norwegian.....	4 years	1851	189–	.....	M.	Single	0
36	Norwegian.....	16 years	1867	.....	31	M.	.....	0
37	Norwegian.....	[a].....	1852	.....	46	M.	.....	.....
38	Norwegian.....	8 years	1860	.....	38	M.	Married ..	3
39	Norwegian.....	[a].....	1853	1897	.....	M.	Single	.....
40	.....	[?].....	1845	1894	.....	F.	Married ..	6
41	Swede.....	[?].....	1845	1897	.....	M.	Married ..	2
42	.....	7 years	1860	.....	38	M.	.....	.....
43	Swede.....	4 years	1865	.....	33	F.	Married ..	4
44	Norwegian.....	8 years	1867	1897	.....	M.	.....	.....
45	Norwegian.....	3 years	1843	.....	55	M.	Single	.....
46	.....	8 years	1861	.....	37	M.	Married ..	2
47	Swede.....	6 years	1858	.....	40	M.	Married ..	5
48	Norwegian.....	[a].....	1862	1890	.....	F.	Single	.....
49	Swede.....	.....	1845	.....	53	F.	Married ..	4
50	Norwegian.....	[a].....	1863	1898	.....	M.	Married ..	1
51	Norwegian.....	.....	1843	.....	55	M.	Married ..	8

[a] Disease appeared in Europe.
[b] Between 1818–1828.
[c] Between 1818–1858.
[d] Between 1829–1839.
[e] Between 1858–1868.

ARE NATIONAL LEPROSARIA IN THE UNITED STATES DESIRABLE?

By H. M. Bracken, M. D.,
Secretary and Executive Officer Minnesota State Board of Health.

In order to answer this question intelligently it is necessary to make a careful study of leprosy. Early in the year I sent a circular letter to the various provincial and State sanitary authorities asking for information regarding leprosy within their jurisdictions, and also asking their opinion as to the best method of caring for lepers. The

information returned is given in condensed form in the following table:

TABLE.

Name of province or State.	Is there any record of lepers within your jurisdiction?	How have they been cared for?	What future system for the care of lepers would you suggest?	Name of reporter.
Manitoba	Yes		National	
New Brunswick	...do	At a national lazaretto.		
Nova Scotia	...do		National	Dr. A. P. Reid.
Ontario	No		...do	Dr. P. H. Bryce.
Quebec	...do		...do	Dr. E. Pelletier.
Arkansas	...do	No system	...do	Dr. R. B. Christian.
California	Yes	County care	...do	Dr. W. P. Mathews.
Colorado	No	No system	...do	Dr. G. E. Tyler.
Connecticut	...do	...do	National or State	Dr. C. A. Lindsley.
Delaware	...do	...do	National	Dr. A. I. Lowber.
Illinois	...do	...do	State and national	Dr. J. A. Egan.
Indiana	...do	...do	National	Dr. J. N. Hurty.
Iowa	Yes	Isolation at home.	...do	Dr. J. F. Kennedy.
Kansas	No	No system	...do	Dr. W. B. Swan.
Kentucky	...do	...do	County care	Dr. J. N. McCormack.
Louisiana	Yes	State care	National	Dr. G. F. Patton.
Maine	No	No system	...do	Dr. A. G. Young.
Maryland	Yes	...do	...do	Dr. J. S. Fulton.
Massachusetts	No	...do	National or State	Dr. S. W. Abbott.
Michigan	...do	...do	No suggestion to offer.	Dr. H. B. Baker.
Minnesota	Yes	Isolation at home.	National	Dr. H. M. Bracken.
Mississippi	No	No system	...do	Dr. J. F. Hunter.
Nebraska	...do	...do	...do	Dr. F. B. Crummer.
New Hampshire	...do	...do	No suggestion to offer.	Dr. I. A. Watson.
New Jersey	Yes	County care	...do	Dr. H. F. Mitchell.
New Mexico	No	No system	National	Dr. T. P. Martin.
New York	Yes	...do	Probably national	Dr. B. F. Smelzer.
North Carolina	No	...do	National	Dr. R. H. Lewis.
North Dakota	Yes	County care	...do	Dr. H. D. Quarry.
Ohio	...do	No system	...do	Dr. C. O. Probst.
Oklahoma	No	...do	...do	Dr. L. H. Buxton.
Pennsylvania	Yes	City	...do	Dr. Benj. Lee.
Rhode Island	No	No system	National or State	Dr. G. T. Swartz.
South Carolina	Yes	...do	No suggestion to offer.	Dr. T. G. Simons.
South Dakota	...do	County	National	Dr. A. E. Clough.
Tennessee	No	No system	...do	Dr. J. A. Albright.
Texas	Yes	Sent to Louisiana.	State	Dr. W. T. Blunt.
Vermont	No	No system	National	Dr. J. H. Hamilton.
Virginia	...do	...do	...do	Dr. P. A. Irving.
Wisconsin	Yes	Isolation at home.	...do	Dr. U. O. B. Wingate.

Three provinces and 14 States report having had lepers to deal with. Other States undoubtedly belong in this list. It has been possible for me to make a somewhat careful study of leprosy in the Northwest. This report will therefore be given in four parts. The first part will relate to cases of leprosy reported officially from five States, viz, Iowa, Wisconsin, Minnesota, North Dakota, and South Dakota. The second part will relate to the cases of leprosy reported officially from a few other States. The third part will give the history of a few cases of leprosy of which I have knowledge through private information. The fourth class includes five cases, some of whom may have been already reported in parts 1 or 3. The possibility of duplication in dealing with these cases is so strong that I have preferred reporting them as a distinct class. The location in which the official cases

have, or had, residence will be given. The nonofficial cases, for evident reasons, can not be located.

PART I.—*Lepers reported officially from Iowa, Wisconsin, Minnesota, South and North Dakota.*

No.	State.	Nationality.	Disease appeared abroad.	Date of birth.	Date of death.	Type of disease.
1	Iowa	Norwegian	Yes	1880	1899	Tubercular.
2	do	do	do			
3	do	do	do			
4	Wisconsin	do	do			
5	do	do	do	1897	1897	Do.
6	do	do				
7	do	do				
8	do	do		1898	1898	Anæsthetic.
9	do	do		1839	(a)	Do.
10	do	Swedish	Yes	1853	(a)	Tubercular.
11	Minnesota	Norwegian	do	1831	1880	Anæsthetic.
12	do	do	do	1822	1878	Tubercular.
13	do	do	No	1843	1878	Anæsthetic.
14	do	do	do	1846	1876	Tubercular.
15	do	do	do	1848	1878	Do.
16	do	do	Yes	1815	1877	Do.
17	do	do	do	1848	1868	Anæsthetic.
18	do	do	No	1825	1885	Do.
19	do	do	do	1854	1885	Tubercular.
20	do	do	do	1839	1884	Anæsthetic.
21	do	Swedish	do	1853	1886	Do.
22	do	Norwegian	do	1826	1888	
23	do	do		1851	1888	Tubercular.
24	do	Swedish	Yes	1831	1889	Do.
25	do	Norwegian	No	1862	1889	Do.
26	do	do	Yes	1849	1890	Anæsthetic.
27	do	do	do	1842	1890	Tubercular.
28	do	do		1816	1896	Do.
29	do	do		1814	1892	Do.
30	do	do	Yes	1830	1899	Anæsthetic.
31	do	do	do	1840	1896	Do.
32	do	do	do	1848	1896	Do.
33	do	do	do	1820	(a)	Do.
34	do	do		1834	1900	Tubercular.
35	do	do		1857	1894	Do.
36	do	do	Yes	1838	189–	Do.
37	do	do	do	1840	(a)	Anæsthetic.
38	do	do	do	1843	1897	Do.
39	do	do		1864	1899	Tubercular.
40	do	do	Yes	1850	189–	Mixed.
41	do	do		1850	1892	Tubercular.
42	do	do		1826	1895	Anæsthetic.
43	do	do			189–	Do.
44	do	do	Yes	1871	189–	Tubercular.
45	do	do		1851	189–	Do.
46	do	do		1867	(a)	Do.
47	do	do	Yes	1852	(b)	Do.
48	do	do		1860	(a)	Anæsthetic.
49	do	do	Yes	1853	1897	Tubercular.
50	do	Swedish	do	1845	1894	Do.
51	do	do	do	1845	1897	Do.
52	do	Norwegian		1860	(c)	Mixed.
53	do	Swedish		1865	(a)	Tubercular.
54	do	Norwegian		1867	1897	Anæsthetic.
55	do	do		1843	(a)	Mixed.
56	do	Swedish		1861	(a)	Tubercular.
57	do	do		1858	(a)	Mixed.
58	do	Norwegian	Yes	1862	1890	Anæsthetic.
59	do	Swedish		1845	1900	Mixed.
60	do	Norwegian	Yes	1863	1898	Tubercular.
61	do	do		1843	(a)	Do.
62	do	do	No	1856	(a)	Mixed.
63	do	Swedish	do	1856	(a)	Do.
64	do	Norwegian	do	1845	(a)	Tubercular.
65	do	do	Yes		(a)	Mixed.
66	do	do	do	1828	1899	Anæsthetic.
67	do	do	do	1856	1898	Tubercular.
68	do	do			(a)	Do.
69	do	do	Yes	1869	(a)	Do.
70	do	do	No		1895	Do.
71	do	do	Yes		(c)	Anæsthetic.
72	South Dakota	do		1878	(a)	Tubercular.
73	North Dakota	do		1847	(a)	Do.
74	do	Swedish		1870	(a)	Do.
74	do	Norwegian		1886	(a)	Not leprosy.

[a] Living. [b] Dead. [c] Gone.

PART II.—*Lepers reported officially from other States than above.*

No.	State.	Nationality.	Disease appeared abroad.	Date of birth.	Date of death.	Type of disease.
75	Pennsylvania	Maryland			1900	Tubercular.
76	do	Pennsylvania		1822	[a]	Mixed.
77	do	Swedish		1850	1900	Tubercular.
78	do	Pennsylvania		1856	1900	Do.
79	do	Chinese			1897	
80	do	do			[b]	Do.
81	New Jersey	do			[b]	
82	Ohio	(?)				

[a] Living. [b] Dead.

PART III.—*Unofficial list of lepers.*

Number.	Nationality.	Number.	Nationality.	Number.	Nationality.
1	Mexican.	4	Greek.	22	Chinese.
2	American.	5–9	Norwegian.	23–25	Norwegian.
3	Chinese.	10–21	Icelandic.		

PART IV.—*Possible duplicates.*

Number.	Nationality.	Number.	Nationality.	Number.	Nationality.
A–B	Norwegian.	C–D	Icelandic. (?)	E	Chinese.

SUMMARY OF CASES REPORTED.

Official	82
Nonofficial	25
Possible duplicates	5
Total	112

OFFICIAL LIST OF LEPERS.

Case 1.—This patient's mother was recognized as leprous two years before she gave birth to this child, and was placed in a leprosarium in Norway, where she died four years after her disease was recognized. The father married again (whether in Norway or the United States is not stated), and settled on a farm in Iowa. Tubercular leprosy appeared in this child when 6 years old, and she died at the age of 18. She lived at home, and, although quite strictly isolated, was probably better cared for and happier than she could possibly have been in a leprosarium. She slept and ate by herself, but was not excluded entirely from association with other members of the family.

Neither an older sister (born before the mother showed evidences of the disease) nor stepsisters have leprosy.

Cases 2, 3 and 4.—I have so far been unable to obtain a full record of these cases.

Case 5. This man, a Norwegian, died in 1897. He was married, and his widow and children (four) are living and healthy. He came to America about 1884 and showed slight symptoms of tubercular lep-

rosy at that time. His general condition toward the end was bad. He was a county charge, and there was more or less complaint in the community concerning the methods of quarantine pursued. His life was not made more tolerable by such unnecessary complaints.

Cases 6 and 7.—Of these I have no records.

Case 8.—This man, a Norwegian, died in 1898. His age at the time of death is not given. His mother was recognized as leprous when he was 12 years old. His was of the anæsthetic type. He was poor and a county charge; was never married. He was a sufferer for years. Undoubtedly his life might have been made more tolerable had he been properly cared for.

Case 9.—This man, a Norwegian, still living, is about 66 years old. He is married and has several grown children. The wife and children are all free from leprosy. His is the anæsthetic form of the disease, and has been present for about twenty-five years. His hands and one foot are deformed. One leg has been amputated, and the sight of one eye is lost. Financially he is comfortably well off, and is cared for by his wife and married daughter.

Case 10.—A Swedish woman, still living, aged 42 years. She is said to be single, and to have the tubercular form of the disease, which is now in the advanced state. She is said to have had leprosy since birth. She is cared for at her home, in a secluded manner, and is comfortable.

Case 11.—A male (Norwegian), died at the age of 49, in 1880. His was the anæsthetic form of leprosy, from which he is said to have suffered for a period of twenty-four years. He was resident in the United States nineteen years. The financial condition or general surroundings of this patient are not known. One maternal great-uncle was leprous.

Case 12.—A male (Norwegian), died at the age of 56, in the year 1878. He is said to have had the tubercular type of leprosy, and is also said to have been ill fourteen years, the disease appearing, according to the records, ten years after his arrival in this country. Nothing is known of this man's financial condition or the system pursued in caring for him. He had a leprous cousin, but no other leprous relatives are noted.

Case 13.—A male (Norwegian), died at the age of 35, in 1878. He had the anæsthetic type of the disease for a period of ten years, nine of which were said to have been spent in this country. Nothing is known of the financial condition or care given this patient. A paternal uncle was recognized as leprous.

Cases 14, 15, and 29.—These may well be considered together. They were three brothers, born in Norway. The father died of leprosy. In 1864 an elder brother sent for his widowed mother and her other children (three sons and one daughter) to come to Minnesota. These three sons all died of tubercular leprosy, one in 1876 (case 14),

the second in 1878 (case 15), and the third in 1892 (case 29). The first two were married, but left no children. Both widows married, and are still living and well. The third case was never married. The first two were probably as well cared for at their homes, on a farm, as they could possibly have been at a leprosarium. The third lived in a small city. He had been in business, and was a general favorite. When the disease became well marked and revolting he was tolerated as a stranger would not have been. The mother, the oldest brother, and the sister (younger than cases 14 and 15) escaped infection. The mother died at the age of 87. The brother and sister are still living.

Case 16.—This man, a Norwegian, died at the age of 62, in 1877. His disease was recognized as of the mixed type. It had existed for a period of thirty years, the last twenty-one of which were passed in this country. Nothing is known of the surroundings or care of this patient. His brother and a paternal uncle were recognized as lepers, living presumably in Norway.

Case 17.—This man, a Norwegian, died at the age of 30, in 1878. His disease was of the anæsthetic type. Its duration is not given; neither have we any knowledge of the care he received or of his surroundings. A maternal uncle is said to have been leprous.

Case 18.—This man, a Norwegian, died at the age of 60, in 1885. He was one of the lepers seen by Prof. William Boeck, of Christiania, when here in 1869–70. His was the anæsthetic form of the disease, and it had existed for a period of at least twenty years. He was resident in the United States twenty-nine years. There is no further record of this case, except that he belonged to a decidedly leprous family in Norway, his father, a paternal aunt, brothers, sisters and cousins being recognized as leprous.

Case 19.—This patient, a woman, died at the age of 31, in 1885. Her nationality is not given, but she was presumably a Norwegian. The disease was of the tubercular form, and is noted as having been present for nine years, and having made itself manifest nine years after she came to America. She was in the United States eighteen years. Nothing more in the history of this case is given.

Case 20.—This man died at the age of 41, in 1885. His nationality is not given, but he was presumably a Norwegian. His was the anæsthetic form of leprosy, and the records state that it was recognized eleven years before his death. He was resident in the United States sixteen years. Nothing more is known of this case.

Case 21.—This man, from Sweden, died at the age of 34 years, in 1886. His was the anæsthetic form of the disease, and its duration is said to have been about ten years. He became a county charge. He was not married.

Case 22.—Of this man there is no record further than that he was a Norwegian, that he died at the age of 62, in 1888, and that he was married. His home had been in the country.

Case 23.—This man, a Norwegian, died at the age of 37, in 1888. His was the tubercular form of leprosy. The duration of the disease is not known. He was poor and had some financial aid from the city in which he lived, but he remained at home and was well cared for by his wife. The attending physician informs me that the patient had two children, aged, respectively, about 14 and 15 years, both bright, and in attendance at the public schools. His home was a sample of neatness. Neither his wife nor children showed any evidence of the disease.

Case 24.—This man, a Swede, died at the age of 58 years, in 1889. His was probably the tubercular form of the disease, although it is not so stated by the reporter. He was married, and of his eight children seven are still living, ranging from 20 to 40 years of age. The widow is also still living. None of these show any signs of leprosy. He was cared for at home. No facts are available as to his financial condition or general surroundings during his long illness. It is said that the disease was recognized soon after his arrival in this country, in 1881.

Case 25.—This man, a Norwegian, died at the age of 27, in 1889. His was the tubercular form of the disease. It is not known how long the disease existed. The man was single and of the ne'er-do-well type. When he became helpless he became a county charge and died in a "pesthouse," where the care given him was not that of a modern hospital.

Case 26.—This man, a Norwegian, died at the age of 51 years, in 1890. His was the anæsthetic form of the disease. The disease is said to have been present for twelve years. There is no record of this man or his surroundings further than that he was married. His death certificate was signed by a coroner, so I presume a properly equipped and conducted leprosarium might have been an improvement upon the place in which he spent his last days.

Case 27.—Of this man there is no record further than that he was a Norwegian, and died at the age of 48, in 1890. His was the tubercular form of the disease, said to have been in existence thirty years, and to have appeared twelve years before he came to America.

Case 28.—This man, a Norwegian, died at the age of 79 years in 1895. His was the tubercular form of the disease. It was recognized first twenty-two years before his death, and seven years after his landing in America. He had a comfortable home and was well cared for. Five children are living, none of whom show any signs of the disease.

Case 30.—This man, a Norwegian, died at the age of 69 in 1899. His was the anæsthetic form of the disease. He came to America in 1874, and had been recognized as leprous since 1860. He is said to have been self-supporting. I have no knowledge of his surroundings or general care.

Case 31.—This man, a Norwegian, died at the age of 56 years in 1896. His was the mixed form. The disease is said to have first appeared in 1858. He came to America in 1871. He was a single man, and lived alone in a hut not far from his brother. He is described as having been "hideous" to look upon. Both lips, the nose, and all of the fingers were gone. Both lower eyelids were everted. Tubercles were present in various parts of the body. The latter days of this patient must have been of a character hard to realize. Truly a leprosarium would have been a blessing to him.

Other members of this man's family showed no evidences of the disease.

Case 32.—This man, a Norwegian, died at the age of 48 in 1896. His was the anæsthetic form of the disease. There is no record of its duration or of the general surroundings of the patient. His father died a leper in this country (case A, page 22), as did also one brother (case 70). He left a widow and 5 children, none of whom have ever shown evidence of the disease.

Case 33.—This man, a Norwegian, is still living, at the age of 80 in 1900. His is the anæsthetic form of the disease. He has been a sufferer for many years and is most emphatically a case for a well-cared-for leprosarium.

Case 34.—This man, a Norwegian, died at the age of 66 years early in 1900. His was the tubercular form of the disease and had been known to exist for sixteen years. He was a farmer, in comfortable circumstances, and was well cared for by his wife and one son, who lived at home when I visited him in 1899. His room was neat and well kept. He was as comfortable as possible for one confined to bed with tubercular leprosy to be. The disease was loathsome to look upon. At present his widow and 6 children, all grown, are living. None of these show any signs of leprosy.

Case 35.—This man, a Norwegian, died at the age of 37 years in 1894. His was the tubercular form of the disease, and had been present for at least nine years. There is no record of this man or his surroundings, but it is probable that he was living on a farm, and was taken care of at home. His wife and three children were reported as free from any evidences of this disease in 1898.

Case 36.—This man, a Norwegian, died at the age of about 53 years. His was of the tubercular form. Nothing is known of the care he received, but probably he was well cared for at home. He was ill about ten years. His wife and two daughters were reported as in good health in 1898. Both daughters are school-teachers.

Case 37.—This woman, a Norwegian, is still living at the age of 60 years. The disease is of the anæsthetic type and is said to have been present since 1870. She is not careful or cleanly in her habits, and is a proper case for a well-regulated leprosarium. She came to Minnesota from Wisconsin.

Case 38.—This man, a Norwegian, died at the age of 53 in 1897. His was the anæsthetic form of the disease, and was known to have been present for twelve years before his death. I have no history of his surroundings. His wife and three children were reported in 1898 as free from any evidences of leprosy.

Case 39.—This man, a Norwegian, died at the age of 35 in 1899. His was the tubercular form of the disease, and it is said to have first appeared in 1882. Although a leper, he, a laboring man, took care of himself in a city until shortly before his death.

Case 40.—This man, a Norwegian, died when over 50 years of age some time after 1890. His was probably the mixed form of the disease, and was of long standing. He was poor and should have been cared for in a leprosarium. His widow married again. She and his child (a boy) have never shown any evidences of this disease.

Case 41.—This woman, a Norwegian, died at the age of 42 in 1892. Hers was the tubercular form of the disease. She was married, but there is no record of her having had any children, The disease is said to have been present for eighteen years. Nothing is recorded as to how she was cared for.

Case 42.—This man, probably a Norwegian, died at the age of 69 in 1895. His was the anæsthetic type of the disease. It had been known to be present for at least twenty years. He was a county charge for many years, and a leprosarium would have been the proper place for him. He was not married.

Case 43.—This woman, probably a Norwegian, died some time after 1890. Hers was the anæsthetic form of the disease. Its duration is not known, nor do the records show how old she was at the time of death. She came to Minnesota from Wisconsin. She was married and had three or four children, all of whom were reported healthy in 1898. Her general surroundings are not recorded.

Case 44.—This woman, a Norwegian, was a leper when she came to America in 1890. After staying here two or three years she returned to Norway, where she died. She was single. There is no record as to how she was cared for in this country. She is said to have been poor.

Case 45.—This man, a Norwegian, was recognized as leprous about 1886. He was then 35 years old and had been in America about four years. He was married and had at that time three or four children living. His was the tuberculous form of the disease. He was poor. About 1892 he was sent back to Norway, where he died later.

Case 46.—This man, a Norwegian, is still living. He was born in 1867, and was known to be leprous in 1890. His is the anæsthetic form of the disease. He is single and poor, and should be in a leprosarium.

Case 47.—Of this man, a Norwegian, but little is known. His was the tubercular form of the disease. He was first reported to the Minnesota State Board of Health as leprous in 1892. He had then been unable to work for four years. The disease is said to have appeared in 1884, the same year that he landed in America. This means simply that he came to America a leper. In all probability he is dead, for repeated attempts have failed to find him. There is no record as to his pecuniary condition. He was born in 1852.

Case 48.—This man, a Norwegian, is possibly living still, but it has been impossible to get any trace of him during the past three years. He was born in 1860, and was recognized as leprous in 1890. He was then a married man with a wife and three healthy children. He is said to have been in comfortable circumstances and to have had the disease in mild form—anæsthetic.

Case 49.—This man, a Norwegian, died at the age of 44, in 1897. His was the tubercular form of the disease. It had been recognized as present for at least twenty-four years. He was poor and a proper case for a leprosarium. He was single.

Case 50.—This woman, from Sweden, died at the age of 47, in 1894. She was recognized by a noted leprologist as leprous in 1893, the disease being of the tuberculous type. In spite of this the physician who attended her in her last illness (pneumonitis) stated that he did not think she had leprosy. This simply illustrates the ease with which the disease may be passed over by the ordinary practitioner. She was married and had six children, all of whom were in good health in 1898. There is no record of her financial condition or the means employed to care for her.

Case 51.—This man, from Sweden, died at the age of 52, in 1897. The disease is said to have appeared in 1892. It was of the tubercular type. He was comfortably fixed financially, and was well cared for at home. He left a widow and four or five children, all reported healthy in 1898.

Case 52.—This man, a Norwegian, was born in 1860, and was recognized as a leper in 1889. He lived in Chicago at one time, but came to Minnesota for treatment by a Norwegian physician familiar with leprosy. His was of the tubercular type. He had a hard experience when he first came to Minnesota. He was practically chased from one place to another, until finally concealed for a time. The people tried to send him back to Chicago, but the car in which he was traveling was sidetracked at La Crosse, and from here he was finally removed by wagon a distance of over 100 miles into a safe place and under the care of a kind-hearted physician. The physician who had him in charge died, and it is said the patient then found his way to Norway and entered a leprosery. Whether he is still living is not known. He has sufficient means to pay his way comfortably, and if he had not been

persecuted his life might have been made tolerable. His case illustrates the needs of leprosaria as a refuge for unfortunates.

Case 53.—This woman, from Sweden, was born in 1865, and is still alive. She came to America in 1887, and soon afterwards married a Norwegian. In 1889 leprosy appeared. She is an exceedingly neat woman, and does everything in her power to prevent any possible infection of her family. Hers is the tubercular form of the disease. She has four children, two born before the disease appeared, two since. All of these, as well as the husband, were free from any symptoms of leprosy when seen by me in March, 1897. The oldest child was of age to enter the public school, but the sentiment against leprosy was so great as to exclude her, although perfectly well. The husband was a carpenter, and it was almost an impossibility for him to secure work because of his wife's disease. The poor woman was longing for death to come in order that the persecution of her family on her account might cease, but she is still suffering, not only physically but mentally. What a refuge a leprosarium would have been to this poor woman! She would then not only have had good medical care and nursing, but the ostracism of her family would have ceased.

Case 54.—This man, a Norwegian, died at the age of 30, in 1897. His was the anæsthetie form of the disease. The records show nothing for this man further than that he was single and poor. Undoubtedly a leprosarium would have been the proper place for him.

Case 55.—This man, a Norwegian, is still living, aged 57 years. He has the anæsthetic form of the disease, which first made its appearance in 1874 or earlier. He is single and a county charge. When first seen by me, in 1898, he was serving as a school janitor, but when the nature of his disease became known he could no longer get employment. He is much crippled. A leprosarium would be a great blessing to this man. He says he had no leprous relations, but had leprous neighbors in Norway.

Case 56.—This man, from Sweden, is living, aged 39 years, and is able to support himself; but the time will soon come when he will become a public charge, and then he will probably be given the privilege of dying in a "pesthouse." His is the tubercular form of the disease. It made its first appearance in 1892, and was then diagnosed as syphilis. He has a wife and two children, aged 13 and 10 years, all living and free from any symptoms of leprosy. A leprosarium will be the proper place for this man soon, although his condition has not changed much for the worse during the past two and a half years. He was associated with lepers as a lumberman in Sweden.

Case 57.—This man, from Sweden, is living, aged 42 years. His is the tubercular form of the disease. It is said to have first made its appearance in 1888, six years after his landing in America. He is

comfortable, in his own home on a farm, well cared for by his wife. He has four children, all girls. The wife and children show no signs of leprosy. The neighbors seem sensible, and there is no tendency to ostracise the family. He is a fortunate leper.

Case 58.—This woman, a Norwegian, died at the age of 28, in 1890. Hers was the anæsthetic form of the disease. She had been in a leper hospital in Norway, and her relations state that she was discharged "cured." The disease first appeared in 1874, when she was twelve years old. She came to America in 1887. She died of pneumonia, after one month's illness. She was never known as a leper in the community where she lived in this country. Her home was comfortable, and she was well cared for. She was not married.

Case 59.—This woman, from Sweden, died at the age of 55 years, but a few days ago. Hers was the mixed type of leprosy. It first appeared as the anæsthetic type, in 1886. She was married and had six children, two of whom (girls) are still living, as is also the husband. None of these show any symptoms of leprosy. If there was a chance for infection it would seem as though it might have occurred in this family, for the woman was filthy in her habits. Fortunately her husband and children had a dread of the disease, and this served as a safeguard. Even in this favored state I would not have been willing to have taken a chance against contracting this disease while living in this woman's home. A leprosarium was the place for this patient, but she is beyond its benefits now.

Case 60.—This man, a Norwegian, died at the age of 35, in 1898. His was the tubercular form of the disease. It is said to have first appeared in 1888, but this was the year that he came to America. He was married and had one child. His wife was devoted to him, and he could not have had better care than that given him during his last illness. Neither his wife nor child show any signs of leprosy. A leprosarium would have been of no benefit to this leper.

Case 61.—This man, a Norwegian, is still living, aged 67 years. His is the tubercular form of the disease. He is married and has eight children. Neither his wife nor children show any signs of the disease. He is quite well cared for at home. He has a brother in a leper hospital in Norway.

Case 62.—This man, a Norwegian, is still living, aged 44 years. His is the tubercular form of the disease. It is said to have first made its appearance in 1893, seven years after his coming to America. In 1899 the question of returning this patient to Norway was under consideration, but the opportunity was allowed to pass, and he is now blind and helpless—a pauper. A leprosarium is the place for him. He is now a county charge. He has never been married.

Case 63.—This man, from Sweden, is still living, aged 44 years. His is the mixed form of leprosy. The disease is said to have been

first noticed in 1893, eleven years after he came to America. He was a laboring man as long as he was able to work, but now is a pauper. He has not been married. His mother, one brother, and one sister died of leprosy in Sweden. Undoubtedly the place for this man is a leprosarium.

Case 64.—This man, a Norwegian, is still living, aged 55 years. His is the anæsthetic form of the disease, and is quite mild. Probably only his physicians and intimate friends know that he is a leper. The disease is said to have first appeared in 1893, eight years after his having come to America. So far as known his general surroundings are good and he is comfortable at home. His wife and three children show no symptoms of leprosy.

Case 65.—This man, a Norwegian, is still living, aged about 32. His is the mixed form of the disease. He states that the disease first appeared in 1898 (this is questionable). He has the leonine countenance, but by one not a close observer would not be thought of as a leper. He is able to attend to business. His wife and two children, aged six and three years, show no signs of leprosy. He came to America in 1888. His mother and one sister died of leprosy in Norway. He says his condition is improving under "Christian science" treatment, but appearances, when I last saw him, did not bear him out.

Case 66.—This man, a Norwegian, died at the age of 73, in 1899. His was the anæsthetic form of the disease. It is said to have appeared twenty-two years before his death and one year after landing in America (not probable). He admitted having had one leprous cousin. He was a pauper for years and finally died at the county poor farm. He was not married, so far as known.

Case 67.—This man, a Norwegian, died at the age of 42 years, in 1898. His was the tubercular form of the disease. The disease was first recognized in 1876, when he was 20 years old. He came to America in 1877, but, finding no improvement, he returned to Norway about 1880. I think he was in a leper hospital in Norway. He was self-supporting while in Minnesota. He was single.

Case 68.—This man, a Norwegian, is still living. He has but recently been reported to the Minnesota State Board of Health, and there has not been time to investigate the case. From the description given, this is the tubercular type of the disease. The neighbors are afraid of this man and shun him as one unclean.

Case 69.—This man, a Norwegian, is still living. His is the tubercular form of the disease. He is a laborer, 31 years old, and single. He came to America about seven years ago, and then had leprosy in its early stages. Probably he will become a public charge as he grows worse and becomes unable to work.

Case 70.—This man, a Norwegian, may possibly be in our records without designation. He was a brother of case 32, and died in 1895.

I can find no facts on file relative to the case. The father of these two cases also died of leprosy, and is probably one of the early cases on our records without a name. (Case A, p. 22.)

Case 71.—This man, a Norwegian, came to Minnesota, a leper, about 1890. He was then about 20 years old. His trip here was to see if his condition would not improve in this climate. There being no apparent improvement, he returned to Norway about 1897. His was not a marked case of leprosy. While resident in this country he was self-supporting. It is not known positively that he is dead.

Case 72.—This man, a Norwegian, is still living, at the age of 22. His is the tubercular form of the disease. The symptoms of leprosy are said to have appeared about five years ago, six years after his coming to America. He is single and destitute and cared for as a public charge, at an annual cost of $650. He lives in a part of the country where the people are unnecessarily alarmed over a leper, and for this reason he has to be given special care. This patient should certainly be in a leprosarium.

Case 73.—This man, a Norwegian, is still living, and a prisoner for the remainder of his life, which will probably not be long. His is the tubercular form of the disease. He was born in 1847 and came to America in 1882. His case was first diagnosticated as leprosy in 1893. Soon after this it became known in his neighborhood that he was leprous, and the process of ostracising him and his family began. He lived on a farm and was prosperous. It became necessary for the county commissioners to separate him from his family and to place him in a house alone, although on his own place, with another leper, less advanced with the disease, to care for him. The community followed out the Bible injunction to the limit in treating this man and his family as unclean. The house in which he lives is about a quarter of a mile from the house in which his family lives. His wife cooks for him and his attendant, and the food is carried and placed at a safe distance from their prison three times a day. It costs the county in which he lives about $600 per annum to care for him. His wife and six children, ranging in age from 10 to 22 years, although perfectly healthy and entirely separated from the patient, are practically ostracised. When it was found that the children had a legal right to attend school, they and two families related to them were allowed full ownership of the school building, and the school directors set about building another schoolhouse for the rest of the children of the district. I am happy in the fact that this kind of treatment is not as a rule given to lepers or their families in Minnesota.

Case 74.—This man, from Sweden, is the keeper of case 73. He has the tubercular form of the disease. He is poor, is single, and will be a charge upon the county as long as he lives unless there is some other provision made, State or national, for the care of lepers. His cost

is estimated at $600 per annum. He has been resident in the State four years and has been in the United States seven years. He admits having noticed swelling of the face in 1897.

Case 74a.—This case is interesting because not leprous. He was reported to me as an American-born leper. Investigation revealed the following: A child, 14 years old, was born in the State where he now resides of healthy Norwegian parents. He has eight brothers and sisters living, all healthy. When about 1 year old he had "cholera morbus," but no physician was in attendance. He apparently recovered from this and learned to walk a little, but later the gait became irregular and the power of walking was lost entirely in 1890. Paralysis of the lower extremities became complete. At present the chest, shoulders, head, etc., are well developed, but the lower extremities are small. The thighs are flexed on abdomen and to the left, so that as the child lies on his back his knees rest on the bed at his left side. The skin is very fair. The boy seems bright and has a good face. The parents try to take good care of him, but are not as cleanly as they should be. Where the body comes in contact with the bed there is a line of dirt upon the skin and a scaly eruption—a filth eczema. There are eruptions on various parts of the body, due to contact of a sensitive skin with soiled bedding or to bites. There are also bed sores. It was worth the hard drive that I made of about 100 miles one Sunday to see this case to be able to say not leprous, and that I have yet to learn of the first American-born leper in this section of the country.

Case 75.—This woman's history, and the fact that she was well cared for during her latter days, is set forth in the records of the Johns Hopkins Hospital. The necessity for leprosaria is well demonstrated by the treatment this patient would have received but for the hospital already named. She was an American who contracted the disease (tubercular form) in the West Indies. She died in 1900. She was a public charge for three years. No children living.

Case 76.—This woman, an American, has been a leper for 40 years. She is now 78 years old. Hers was at first of the anæsthetic form, but is becoming more and more tubercular in character. She has been a public charge for eight years, at a cost of $1,000 per annum. She would be a proper case for a well organized leprosarium. I do not know whether she has had children.

Case 77.—This man, from Sweden, died at the age of 40 years, this year (1900). His was of the mixed type of the disease. It first appeared in 1888. He was a public charge for ten years before his death. He was never married.

Case 78.—This man, an American, contracted the disease in Brazil, and died at the age of 44 years, this year (1900). He returned to Pittsburg in 1879, and the disease has a history dating from 1882. His was the mixed form of the disease. He was a public charge for four

years prior to his death, at a cost of $1,200 per annum. He was married, but none of his relatives are leprous.

Case 79.—A Chinaman, died in 1897. He had been a public charge for seven years.

Case 80.—A Chinaman, died ———. His was tubercular leprosy. He was a public charge for several years.

Case 81.—A Chinese laundryman, was found to be leprous. He was placed in a county hospital, where he died eventually.

Case 82.—Of this case I have no data.

UNOFFICIAL LIST OF LEPERS.

Case 1.—This man, a Mexican, was recognized as a leper. He was self-supporting, and when people became suspicious as to the nature of his disease he disappeared. His was the tubercular form of the disease.

Case 2.—An American physician, who had been a good deal of a traveler, contracted the disease abroad, and died in this country in a hospital. The final illness was of short duration.

Case 3.—A Chinaman, discovered to be leprous, was advised to move on. He did so. It is stated that he wanted to return to China, and he was given means to do so. It is not known whether he followed his inclination in this matter or not.

Case 4.—A Greek; when found to be leprous he returned to his own country.

Case 5.—A typically leprous Norwegian woman. When she learned that she was to be examined for leprosy she disappeared.

Case 6.—A Norwegian is spoken of as returning to his native country in 1891 to enter a leper hospital.

Case 7.—A Norwegian resident who is classed among the "cured" lepers. His name and residence are known only by his physician, who is pledged to secrecy.

Case 8.—A Norwegian who lived in a district where lepers were shunned with a vengeance. When his disease was recognized he was supplied with money and sent, with his family, to Norway. The house in which he lived (not an expensive one, I presume) was bought by the neighbors and burned to the ground.

Cases 9 to 21, inclusive.—These are all Icelanders. None of them are known to be leprous in the communities where they live. None of them are American born. In some the disease is said to be "arrested."

Case 22.—This was a Chinaman in a neighborhood where there had already been a great deal of trouble over leprosy. When his condition was recognized he disappeared from the locality, but probably not from the State. (See Case E, p. 23.)

Case 23.—This is a Norwegian woman whose name ought to be in the official list of one of the States, but is not. She is probably dead, for in 1889 she is described as being 58 years old and affected with tubercular leprosy.

Case 24.—This man, a Norwegian, ought to be upon the official list, but his name was secured October 15, a date too late to allow of further investigation.

Case 25.—This man, a Norwegian, had the mixed form of leprosy. He died about 1888. He was kept in a private house, having certain rooms given up to him exclusively. He was a single man. Not a public charge.

SPECIAL CLASS.

Case A.—This man, a Norwegian, was one of the early lepers in Minnesota, and died many years ago. There is no positive record of this case, but it is probable that he represents one of the first three in the Minnesota list (case 10, 11, or 12). He came from a leprous district in Norway. Two of his sons died in Minnesota of leprosy (cases 32 and 70).

Case B.—This man, a Norwegian, died of leprosy about 1884. None of the records on file are known positively to refer to him, but in this, as in preceding case, it is probable that he represents one of the first three in the Minnesota list (case 10, 11, or 12). Quite recently I was asked to investigate the descendants of this man, for some of them were suspected of being leprous; but the suspicion was groundless. He has children and grandchildren living, none of whom show any signs of leprosy. Tuberculosis has brought death to many of his descendants, and the conditions of some of these tuberculous patients had suggested to the suspicious the possibility of leprosy.

Cases C and D.—Nothing is known of these cases further than that they came from Canada, and were about to settle in northern Minnesota when they learned that they were to be examined as to their being lepers. Thereupon they returned to Canada. It is quite possible that these were Icelanders, for there are many such in Manitoba, and leprosy is not an uncommon disease among them.

Case E.—A Chinaman presented himself to a physician for an opinion as to whether he was leprous or not. He stated that an opinion had been given in the affirmative. He was requested to call at the physician's office for an examination, but never did so. As this occurred in the State where case 22 was given money and told to clear out, it is quite possible that the two are one and the same.

STATISTICS FROM OTHER PARTS OF THE UNITED STATES.

Leprosy statistics from other parts of the United States may be of interest at this point. Dr. Morrow in his article in the "Twentieth Century Practice of Medicine," Vol. XVIII (1899), reports as follows:

For California, a total of 196, at present 26; South Carolina, a total of 16; Texas, a total of 34; Louisiana, a total of 277, at present 131.

Dr. Hyde, to the Congress of American Physicians and Surgeons (1894) reported for other States the total as follows:

Arkansas, 3; Dakota, 2; Florida, 6; Georgia, 1; Idaho, 1; Illinois, 13; Indiana, 2; Iowa, 20; Maryland, 4; Massachusetts, 5; Minnesota, 120; Missouri, 2; Mississippi, 2; New York, 100; New Jersey, 1; Oregon, 3; Pennsylvania, 6; Utah, 3; Wisconsin, 20.

My own records for certain States compared with Dr. Hyde's are as follows:

	Dr. Hyde.	Present paper.
North Dakota	2	2
South Dakota	.....	1
Iowa	20	3
Minnesota	120	61
New Jersey	1	1
Ohio	.....	1
Pennsylvania	6	6
Wisconsin	20	7

I presume Dr. Hyde's figures for Iowa and Wisconsin are estimated. Probably they are not too high. I have taken only those cases of which a history could be given. It is probable that the 120 cases credited to Minnesota are taken from Dr. Hansen's report. It seems to me this, too, must be an estimate. Dr. C. Gronvold was in close touch with Dr. Hansen when he visited Minnesota. If there were 120 cases in the State, I can not understand why they are not on our records. If there were that many cases in 1888 the number for Minnesota is much higher than I have given, for many of the cases in our official list can not have possibly belonged to Dr. Hansen's 120.

Dr. Morrow's article, already referred to, states that the Tracadie (New Brunswick) lazaretto has admitted altogether 150 lepers, and that in 1899 there were still 23 inmates. He also assigns 11 as a total for Cape Breton and 10 for British Columbia.

Mexico has her proportion of lepers.

It might appear from the report of cases in the Northwest that leprosy was far more common in Minnesota than in the neighboring States. I can see no reason for this belief, however, for the lepers in this district are among the immigrants from Norway, Sweden, Iceland, and China. These people have quite a representation in all this group of States. I can only attribute the more complete returns from Minnesota to the fact (1) that there has been less agitation against leprosy

in this than in some of the neighboring States; (2) that with this lack of agitation against leprosy physicians report their cases more willingly to the State board of health, which has endeavored during the last twenty years to palliate the sufferings of this unfortunate class; (3) that Minnesota is fortunate in having among its physicians men who are familiar with leprosy and who are interested in philanthropic work; and these physicians have given material aid to the State authorities engaged in securing a list of all lepers in Minnesota. It may be worthy of note that several lepers in the Minnesota list give the history of a previous residence in Wisconsin, but their names in not a single instance appear upon the Wisconsin records. It might seem to some that, in discussing the leprosy question, it was only necessary to consider those cases now living; but if we are to judge of future needs we must know conditions of the past as well as of the present. Of the 37 living lepers known to be resident in the Northwest, permit me to state that 17 only are in Minnesota, and there is a strong possibility of 2 of these being dead, but we have no positive knowledge of the fact.

It does not seem that all parts of the country are favored as are Minnesota and adjoining States, where not a single American-born leper is found, even among the descendants from a leprous parent.

I do not dwell upon these facts as an alarmist, but simply to remind you that leprosy has existed, does exist, and will continue to exist for years to come in all three countries represented in this association.

Were we to look only at the disease and its future it might be dismissed without further consideration of the group of northwestern States especially referred to in this report. But we must admit that imported cases will continue to appear even here, and humanity demands that such should be cared for rather than to allow them to drag through years of suffering.

With this presentation of facts, I think all will admit the need of leprosaria, and most of you, I doubt not, will feel that the nation is better fitted than any one State to establish and maintain them. It is impossible for a single State, even though it may have a considerable number of lepers, to provide for them at a reasonable rate or to make them comfortable. Louisiana is the only State that has tried to establish a leper colony. In many States lepers are cared for as paupers, but they can not be allowed to associate with other paupers; hence, they are cared for in "isolation wards," which are, as a rule, veritable prisons, and often a hell on earth.

The uninfected have an inherited dread of leprosy. They do not appreciate that tuberculosis, syphilis, and many other preventable diseases are far more dangerous than is leprosy. Hence comes the unreasonable persecution of the leper. If a laborer, he is no longer able to secure employment. If an individual living in comparative comfort, the cry goes out through his neighborhood "Unclean!

Unclean!" and, in consequence, his neighbors shun not only the leper himself but all those who are associated with him. His family is ostracized. His children are either excluded from school or their surroundings are made so uncomfortable that they by choice prefer to stay away. I have seen a family, with children ranging in age from 10 to 22 years, which was practically shut out from the world, because, forsooth, the father was a leper. He did not live with the family or have any intercourse with it, and yet the ostracism was complete against all its members.

With a husband depending upon his work at a trade to support his family, and who could not get employment because of his wife's illness; with children approaching school age who were practically shut out of school on account of the mother's condition, I have seen a poor woman pray for death to come and release her and them, and yet she lived for years under just such suffering.

I have knowledge of a single man, by no means a source of danger, who was driven out of the community in which he lived. He had means sufficient to supply his wants. The people with whom he lived knew how to care for him properly and were willing to do so. He was blind, yet public sentiment drove him away and made him homeless. A State refused to allow him to travel through it by rail, and a car containing this unfortunate man was sidetracked. It is hard to imagine what might have become of him had not a good Samaritan, a physician, gone after him, and driven with him a hundred miles or more across country to his own home, where he kept him until he was able to find a safe and somewhat permanent retreat for him. Truly a leprosarium of the right kind would be a blessing to all lepers subjected to such indignities. It is not only the leper who is financially poor who demands our thoughtful care.

I have seen leper colonies that were nothing but places of abode for the living dead. Far be it from me to urge the establishment of such places in our country. Let us consider briefly what we should find in a leprosarium, and then decide whether we are to work for the establishment of our ideals.

A leprosarium should afford a comfortable home for lepers. This means not only good buildings, but extensive grounds comprising many acres, where the lepers may have liberties and still be in exclusion. The buildings connected with the leprosarium must combine the privileges of a home and of a hospital. Those who have the disease in mild form may need little, if any, medical care. They need comfortable clothing and good food. With those in whom the disease is more advanced, the care should be that of a hospital patient, with medicines to lessen their sufferings and dressings that would commend themselves to any surgeon.

A leprosarium should resemble our modern colonies for epileptics.

It should furnish employment for those who are able to work, and amusement of various kinds for all.

The patients ordinarily found in hospitals stay in them for possibly a few weeks, and then return to home and friends. Not so with the leper. He is an outcast—a patient for life—but not necessarily confined to bed except for brief periods.

In establishing leprosaria we must give some thought to the lepers and their disease. It would not be humane to transport those who by inheritance and birth belong in a tropical climate to a leprosarium in Minnesota, while on the other hand people of Scandinavian or Icelandic origin should not be sent to Louisiana or the Hawaiian Islands. It would seem, therefore, that at least two leprosaria were needed in the United States. The time is ripe for taking hold of this matter. The committee of which I as chairman present this paper was created by this association two years ago because the need of such humane action was recognized as a necessity. The replies to the circular letter which I sent out, tabulated on pp. 11–42, seem to show that sanitarians generally recognize both the need of leprosaria and the fact that they should be national rather than State institutions. California has already memorialized Congress in favor of the national care of lepers. Louisiana, I doubt not, would be glad to transfer her lepers from their present place of abode to a national leprosarium such as I have presented in outline.

Two of the strongest medical societies in Minnesota have placed themselves on record as favoring the establishment of national leprosaria. The American Dermatological Association has a committee appointed to determine, if possible, the best methods to be used in the care of lepers. It would seem that this association should be ready to place itself on record as anxious to find some solution for this vexed proposition. One thing is certain, we will have lepers in this country for years to come, whether imported or of our own production. The thing for us to do is to recognize the fact and meet it. The questions involved are those of sanitation and humanity. Sanitarians are, as a rule, humanitarians, and as we are a recognized body of sanitarians, it is time to act. I therefore, in closing this paper, propose the following resolution:

Whereas it is a known fact that lepers are found in Canada, the United States, and Mexico; that these lepers represent immigrants of many nationalities, together with some Americans; that the exclusion of leprous immigrants by inspection is impossible; that the tendency to importation of leprous immigrants in the future will be greater even than in the past; that the danger of infection of American residents abroad and the importation of the disease through these channels is greatly increased: Therefore, be it

Resolved, That this association place itself on record as favorable to

the establishment of national leprosaria, which may serve, not only as a refuge for lepers, but also as homes and hospitals, making their lives tolerable as far as possible, furnishing employment to those who are able to work, and giving skilled medical care to all cases, with the intent of possibly curing some, and making the road to death less wearisome and painful than it now is to others.

[Letter from Dr. Wingate.]

STATE OF WISCONSIN,
STATE BOARD OF HEALTH,
Milwaukee, Wis., July 2, 1900.

MY DEAR SIR: I have the honor to submit herewith a report in answer to your circular letter relative to leprosy in this State. I have delayed answering, as I have written to all parts of the State where leprosy has ever existed. Have made as thorough an investigation as I can, and am unable to find but the two cases herewith reported. Formerly there were some thirty cases in the State—that is to say, ten or fifteen years ago—but they have all died off but these two. We have never been able to learn that the disease has been contracted or has ever developed in this State. All of the persons affected came to the State suffering with the disease, or have developed it here from inherited conditions.

Respectfully, yours,

U. O. B. WINGATE, M. D.

Dr. J. H. WHITE,
Chairman Leprosy Commission, Washington, D. C.

[Letter from Isadore Dyer]

NEW ORLEANS, LA., *December 19, 1900.*

DEAR DOCTOR: I am sending you herewith a list of cases of leprosy which I have been able to collect for you. I am in hopes of adding some thirty more from one or two of the parishes, and, after revising my own list, I may be able to find some that I have missed.

I believe that it is timely for me to express some opinion to you regarding the status of leprosy conditions here in Louisiana, particularly as I feel that your board is aimed at remedying existing conditions in this country.

In 1894 the present leper home came into existence with the object of providing an asylum for lepers, to which the law compelled all reported cases to be sent under a regular commitment. During the six years of existence of the institution the management has been almost entirely in the hands of the laymen, very little interested in the

medical care of these cases and, therefore, in nowise on the lookout for increasing the number of patients in the institution. The result has been that in the face of a large number of patients in the State the total number received at the institution has aggregated about forty, of which some twenty-five are now living at the home. Of the total number, about ten have been legally sent; the balance have been persuaded to go or have voluntarily entered the home.

I believe that under the system at present in vogue it will be impossible to handle the question of leprosy in this State. Further than this, I think that the most active investigation of the disease is necessary to prevent the further spread, and I believe that the solution lies in the establishment of a national asylum. There are already evidences of leprosy in the neighboring States of Texas and Mississippi, while in Louisiana, of 59 parishes, more than half have leprosy within their confines. Those parishes most affected lie around New Orleans, and in the history of the spread of the disease one parish after another has become infected, and in a graphic way demonstrating the spread to be almost directly in the line of adjacent contact.

In New Orleans itself a large majority of the cases have acquired the disease in the old French section of the city, where leprosy has existed for over one hundred years. In my observation the disease seems to be rapidly on the increase, as the bulk of the cases I report have developed within the last five years. A great many of them apply for treatment with a history of only three or four months' duration of the disease. The type predominating in the beginning is tubercular, with comparatively few purely nerve cases, an argument prima facie of the active nature of the contagion.

My interest has always been public spirited, and it has been unfortunate in that the people of this section are absolutely indifferent to the dangers of such a disease.

I sincerely trust that the work that you have begun may prove eventful, and I shall be glad to serve in all ways to further the object aimed at.

Yours, very truly,

ISADORE DYER.

Dr. J. H. WHITE,
Chairman Leprosy Commission, Washington, D. C.

[Letter from Dr. Isadore Dyer.]

NEW ORLEANS, *September 16, 1901.*

DEAR DOCTOR: The duplicate list, etc., received.

I am sending you additional names, together with a discursive opinion, as you requested, regarding the establishment of an asylum.

I hope you will keep me in touch with the reports and the probable

date, so that we may get our Representatives in Congress interested in any projected legislation.

Should any other cases develop, I shall send the list.

Very truly, yours,

ISADORE DYER.

Dr. J. H. WHITE,
Chairman Leprosy Commission, Washington, D. C.

[Inclosure.]

The history of leprosy in every country where it has been introduced evidences the fact that the disease has always flourished until some kind of segregation and isolation were obtained.

In Europe little attention was paid to the malady until by the twelfth century it had become widespread. Then lazarettos were established by the hundreds, and barbaric ostracism was practiced.

Modern instances of the spread of leprosy are evidenced by the conditions in the Hawaiian Islands, where leprosy has been endemic only about fifty years; in Louisiana, where it has gradually grown into an endemic disease in about one hundred years, and in modern Europe, where in recent years the reappearance of the disease created enough alarm to demand and to secure legal control of the disease.

It is quite beyond argument that the segregation of lepers in time destroys the disease by eliminating the element of contagion, now conceded as the method of spread of the disease.

The mission work in India, in addition to that maintained by the British Government, is gradually bringing about some reduction in the amount of leprosy in that hotbed of the disease.

Almost all of the European Governments have established institutions for the segregation of lepers. Several of these countries have passed stringent laws regarding the ingress and egress of lepers in the country.

Therapeutic measures in leprosy are still in the experimental stage, but there are several agents of decided value in ameliorating the disease and exceptionally in curing it.

The exact status of leprosy in the United States may not be known for some time to come. The difficulties in the way of learning the numerical occurrence of the disease are many. The ignorance as to diagnosis is one large factor, and the personal equation between doctor and patient another.

The fact, however, that leprosy has been demonstrated as endemic in Louisiana, probably so in California also, and that it occurs in numbers in New York and Minnesota, with straggling cases all over the country moving from place to place, all points to the need of some universal action for its control. This deduction is evident, for the

reason that if one State legislates against leprosy, the victims of the disease emigrate. This has occurred in the case of Louisiana when the leper laws of 1890 and 1894 were promulgated.

There should be a national leper asylum, and it should be modeled on the broadest humanitarian plane. This asylum, and there might be more than one as the occasion directs, should be located conveniently near to the known centers of the disease. The institution should be conceived upon the plan of a colony, with all provision for the domestic comfort and the physical content of the inmates. There should be provision for the amusement and education of the young and adult.

The institution should have complete hospital facilities, with all that is to-day necessary for a well-equipped hospital, including a laboratory and hydrotherapic outfit. The pavilion system should prevail; families should not be separated, and a domestic scheme should be arranged.

To-day the possibility of the cure of leprosy is no longer chimeric, and if it is to be cured, the United States in establishing a refuge for the victims of the disease should at the same time essay all means to solve the problem of the treatment of the malady.

It is my belief that the successful treatment of the disease depends as much on routine in treatment with drugs, and in regular hygiene, baths, etc., as in specifics.

If the Marine-Hospital Service is to assume charge of such an institution, its detail of surgeons should be for a long enough period to allow proper service in such an important work.

I believe, however, that the administration of such an asylum should be separate from any of the established departments of the Government, as then more specific and direct service could be given, without the frequent likelihood of change or interference through the routine and discipline in vogue with the Government services, Army, Navy, and Marine Hospital.

ISADORE DYER.

SEPTEMBER 16, 1901.

[The Washington Post, Sunday, June 16, 1901.]

LEPERS OF LOUISIANA—A PLACE OF ETERNAL EXILE ON THE MISSISSIPPI RIVER—ALL THE CASES ARE HOPELESS—ABOUT 15 ACRES ARE INCLOSED IN THE LEPER COLONY—ON THREE SIDES IS A FOREST, AND ON THE FOURTH IS A RIVER—HOW THE MEN AND WOMEN ARE LODGED AND CARED FOR—NEARLY 200 LEPERS IN THE STATE ARE HARBORED SECRETLY BY FRIENDS.

There is a place behind the levee on the east bank of the Mississippi, 80 miles above New Orleans, that the river boats pass in the early morning long before the passengers leave their berths, so it is not

pointed out as one of the sights of the river. Perhaps it would not be pointed out anyway, as it could hardly be expected to enhance the attractiveness of the route. The lazy plantation negro passing it on the river road "gets a gait on" his mule, because of a superstitious dread; and to those even who fear only the material, the eerie atmosphere brings a shudder. The character of the place is little known, except to the Creoles of Iberville, the parish in which it lies, and to the steamboat men who bring supplies to it. An uninformed person would suppose it was only one of the several deserted plantations to be seen along the Mississippi, relics of Louisiana's "'fo' de wah" glory, though a larger and grander ruin than the others. Such it was until 1894, when put to its present use. It is now a leper colony, the only institution of its kind in the United States.

When arrangements were made in 1894 for the removal of the band of lepers hitherto confined in a pesthouse on the outskirts of New Orleans, to the old and long-deserted mansion in Iberville Parish, the residents of the parish threatened to attack the invading force and burn down the place. When they learned, however, that the State officials stood ready to back the project with a military force, they gave in. Late on the night of November 30 the melancholy procession moved out from the pesthouse and climbed into covered wagons, which were driven to the river front, where a barge towed by a tug was awaiting them. No steamer would convey them, fearing to hurt its passenger traffic. In the morning they were safely lodged in their new quarters, and there began for them an easier and pleasanter life than they had known since the relentless law had shut them off from their fellow-men.

BURIED WITHIN THE COLONY.

The leper settlement proper is inclosed by a high board fence, outside of which none of the lepers are ever allowed; not even after death, for they are buried in their own little cemetery, in the southeast corner of the inclosure. About 15 acres are inclosed. On three sides of this is a thick forest, on the fourth the river. The two long rows of cottages that were once slave quarters have been repaired and are now the homes of the lepers. The men occupy one row and the women the other. Between the rows a double line of moss-covered oaks runs the entire length. On the men's side, in the space between their cottages and the fence, is a vegetable garden that the able-bodied among them work. On the women's side is a flower garden that occupies much of their time.

One of the cottages on the women's side is used as a chapel. The dining room is the half of a raised cottage that crosses the inclosing fence. Those who are able walk to their meals and help the sisters

attend the others. The half of this house without the inclosure is used by Father Claffey, the priest now ministering to the institution.

When the new site was decided upon the Sisters of Charity were asked to take charge of it. The mother superior of the organization asked for volunteers, for she would send no others on such a mission. Some said they would go anywhere they were sent, but could never volunteer for this fearful work. Four gave up their lives to the care of the lepers. To this number, a Miss Dehan, not a sister, added her services. Several priests have been assigned to serve for short periods until relieved. As yet none have contracted the disease. They live apart from the lepers entirely, and when waiting upon them or caring for them they wear gloves. This noble little band has made the home a home indeed, but their toils have not eradicated the horror of the place felt among the lepers of the outer world who have succeeded in preserving the secret of their affliction. The law of the State provides that all lepers shall be committed to this institution, but the law is not enforced. There are now 32 lepers confined here, while nearly 200 are harbored secretly in their homes.

IDENTITY OF LEPERS KEPT SECRET.

The identity of those confined at the institution is maintained a profound secret, and few outsiders are allowed to enter the place. A permit, by no means easy to obtain, must be presented before a visitor is admitted. The most tragic cases at the institution are two young girls, both of them beautiful, cultured, and members of prominent Louisiana families. Not a mark has yet appeared upon the face of either, but they wear gloves always. When the writer visited the inclosure these girls were sitting in the garden reading to several children and old men. A sister introduced the writer to the girls without mentioning their names. Both talked cheerfully and without reference to their terrible fate. Their cases are, of course, hopeless. All leprosy cases are.

Life in the settlement is by no means as terrible for the most of the lepers as one might suppose. Many of them are perfectly able to do a good day's work, but no labor is required of them. What work is done they do of their own free will. Many of them take a pride in their gardens. For recreation, the liveliest of them play croquet and even lawn tennis, while those who are partly incapacitated carve wooden ornaments and crochet. They have all sorts of indoor games, and friends keep them supplied with reading matter. Complaining petulance or rebellion against their fate is almost unknown among these unfortunates. They await the inevitable end with a quiet touching patience, treating each other with unfailing sweetness and tenderness. They are a devoutly religious body. Marriage of course is not permitted among them. The children of the settlement were all

legally assigned there with one or the other of their parents. Though leprosy is more prevalent among the negroes than among the whites, there are but seven negro inmates of the colony. There has been but one escape from the inclosure—that of a lad who scaled the fence and got safely away. About a month after he had gone the sisters received a letter, thanking them for all their kindness and informing them that he was on his way to the Sandwich Islands, where there was more scope for those of his affliction.

CRUSADERS AGAINST THE EVIL.

This institution is not the first leper colony in this country; it has had two predecessors, both in the same State. There has been leprosy in Louisiana since the Spanish régime. It was brought over to the province from the West Indies, and in 1786 the leprous beggars in the streets of New Orleans had become so numerous that the authorities had to establish a home and isolate them. The home was erected on Metarie Ridge, a high strip of land surrounded by swamps, just west of the city. It lasted fifteen years—until the patients disappeared, either by death or escape. The crusade had ended after 40 had been ferreted out and incarcerated there, and then the unfortunate beings were left to eke out a doubtful existence. Little or no attention was paid to them, further than the provision of funds to imburse the contractor for their care, and rumor has it that the lack of care and the desolate surroundings hastened deaths and warranted departures. "Leper Land," as the spot was called, remained a wild-looking place until 1805, when a band of itinerant Indians pitched their tents upon it and tore down the rattletrap building for firewood.

Relieved of this constant reminder of the prevalence of the disease, and hearing and seeing little of it because of the seclusion kept by the lepers, who feared another crusade against them, the public grew apathetic to or forgot the danger. So, on to 1878, the disease smoldered in hidden quarters. In this time 80 cases were admitted to the Charity Hospital in New Orleans. The board of health became fearful at this juncture that so many should remain at large, and began a canvass to ascertain the exact number there were in the State, with a view to recommending to the legislature that they be again isolated. But, owing to a rumor persistently circulated that the authorities intended seizing the lepers and transporting them to an island in the Mexican gulf, and there abandoning them, considerable difficulty was experienced in locating them, and only 37 were ascertained.

After two years the board succeeded in having the cases then under its surveillance consigned to a building in the suburbs set apart as a pest house. The history of this place is the same pitiful tale as the former—no management, a dearth of attendants, and those few inefficient or fearful of their duties. As new cases were discovered

they were sent to this place. A number of cases developing in the proximity of this home and the old one was the cause of the State establishing another apart from all habitation. This was the present institution—as successful as such a colony may be.

[New Orleans Democrat, May 30, 1901.]

A NATIONAL LEPER HOME.

We publish elsewhere a communication from Dr. Albert S. Ashmead, of New York, relative to the care of lepers. It is in support of a bill introduced in Congress at the last session by J. P. Wanger, of Pennsylvania, proposing to take away from the State boards of health the care of lepers and to give this care to the National Government, which is required to provide for and keep isolated all the lepers in this country or its colonies. The bill was submitted to the State boards of health of nearly all the States, and generally approved by them, although some objection was raised to a provision giving the United States Marine-Hospital Service charge of the lepers, and it was proposed that a special national leper board be created instead, composed of men who understand the disease. In order not to infringe on the rights and privileges of the States, the bill provided that any State might turn its lepers over to the national board, to be cared for by it, but it was not obligated to do so. The bill also provided for the establishment of a national leper home and farm a mile square in a portion of the Yellowstone National Park, and near its center. This location was selected for the very reason that made the Elkhorn location in Jefferson Parish objectionable. Any measure would have been greeted with shouts of disapproval that located a leper home in any of the States. Congress had to select a site over which it had supreme jurisdiction, and far removed from any thickly settled neighborhood. On the other hand, the point chosen is so admirable in climate and surroundings that no possible objection can be heard from the lepers, who are sent to an earthly paradise. The climate is antileprous, for leprosy is restricted almost entirely to the seacoast, and is never found in any mountainous or elevated region. It is presumable, therefore, that its contagiousness will be lessened there, even if the lepers are not benefited by being removed from the seacoast to the mountains, as is hoped.

This bill was before Congress at the last session but was not acted on. It will be introduced again at the coming session and vigorously pushed. It will certainly receive more consideration then, with the facts that will be brought to the attention of Congress.

It has recently been shown that leprosy is increasing in the world, largely due to the failure of civilized countries to take the radical steps needed to crush it out. In the United States we have escaped

the disease, except in a few States, but latterly it has been introduced into California from China and into Minnesota and Wisconsin from Scandinavia, where it prevails among the fisherfolk. By our recent acquisitions in the Pacific we have annexed lepers by the tens of thousands, and have been brought face to face with the problem. We have in Hawaii a leper colony, while leprosy is rampant in some of the Philippine Islands and is spreading.

Under these circumstances the possibility of an increase in leprosy in the United States is so great that the country can not consent to hide its head much longer under its wing, but will have to take hold of this matter and see what it can do to get rid of the disease.

The difficulties of handling it under present conditions have been well illustrated in Louisiana, California, and Minnesota, and the country has wavered between a policy of extreme cruelty and extreme laxness. While some of the States insist on isolation, others, like Minnesota, do not, and it is needless to say that under such opposing policies it will always be impossible to root the disease out of the country. Moreover, the popular prejudice in the States against leper hospitals interferes with the proper enforcement of the law, of which we have a conspicuous example in Louisiana. The lepers, it is said, are willing to go into a hospital suitably located, where they will be well treated and get the proper medical attendance, but popular fear or prejudice will not tolerate a location of this kind, and it is insisted that the lepers be sent to some far-away point practically beyond the reach of those physicians who are willing to give them care and attention. The result is that the Louisiana law requiring the confinement and isolation of lepers has become almost a dead letter, and only a fraction of these unfortunate people are confined, the greater majority roaming at large and thus keeping alive and perpetuating a disease that would soon be stamped out if the law were enforced.

Under the present system, therefore, with one State (Minnesota) not properly isolating its lepers, and another State (Louisiana) isolating only a portion of them and allowing the others to go at large, the task of getting rid of this loathsome disease is difficult if not impossible, whereas nothing is easier than to crush it out with a little energy and common sense. And the fact that the United States has recently annexed some 75,000 or 80,000 lepers is the very best reason why some energy should be shown in getting rid of the malady.

Under these circumstances, it would seem that the leper bill introduced in Congress is wholly unobjectionable, especially as its provisions are not mandatory, but simply allow the States to call on the Federal Government to assist them in caring for their lepers if they feel that they are unable to do so alone, if they can not secure a proper site because of the fears of the people and the objection to leper hospitals, or if the lepers are unwilling to surrender themselves and accept the accommodations offered them by the States.

What is wanted is the extinction of leprosy in the United States, and the present variegated systems in force in the several States have not only wholly failed to accomplish this result, but have had the contrary effect. A more uniform and radical treatment of the problem is needed, and that the bill before Congress seems to assure. It does not invade the powers of the States, but merely offers the assistance of the National Government in the treatment of a malady which the States have so far been unable to handle successfully.

[Letter from Dr. A. W. Hitt.]

NEW YORK, *September 24, 1900.*

DEAR SIR: A communication from your honorable body finally reached me after having been forwarded to Europe and back. Before I had time to answer it, was compelled to have my appendix removed, which caused another delay of several weeks. In the meantime your blanks were misplaced.

With regard to lepers now under my care, will say that I have had none for over one year, as I have been away from home.

Dr. S. H. Buckley brought a case to me just before I left Chicago. We did not tell the young lady that she had leprosy, as her aunt requested us not to let her know it. Shortly after this the young woman and her aunt disappeared, since which time we have been unable to locate them.

The great difficulty in keeping a case under observation is they fear some measure will be taken to isolate them. This they seem to dread more than the disease. Consequently they disappear and go where the disease will not be recognized.

I was told by the late Dr. John B. Hamilton (1897) that there were at that time 522 lepers in the United States. I believe you can find the same statement in the "Journal of the American Medical Association," 1897–98.

I am pleased to hear that the lepers of the Philippines are to be segregated.

While in India (1894) I made a map of that country showing approximate number of inches of rainfall during the year, also number of lepers in each district.

	Approximate average rainfall.	Number of lepers per 10,000 inhabitants.
	Inches.	
Rajputana	7	1.4
Hyderabad	30	3.4
Oudh	38	3.9
Bombay Presidency	74	5.3
Burma	105	11.8

In looking for a location for these unfortunate people, it might be well to take the above into consideration.

I have been very much interested in the work for about ten years, and it will give me pleasure to assist the leprosy commission in any way possible either here or elsewhere.

Awaiting your further orders, I am,

Yours, faithfully,

A. W. HITT.

Dr. J. H. WHITE,

Chairman Leprosy Commission, Washington, D. C.

[Letter from Dr. A. W. Hitt.]

NEW YORK, *September 27, 1900.*

DEAR DOCTOR: I desire to acknowledge receipt of and thank you for your esteemed favor of September 25. Would like to know if any reports in book or pamphlet form have been issued by the leprosy commission.

I have a set of lantern slides which I made while on my last trip, showing the anæsthetic, tubercular, and mixed types of leprosy. Also a few slides showing leper asylums, "fern trees" (which grow only where there is much moisture in the air), manner of shaving, and others relating to the same subject.

It will give me pleasure to send these to you when I return to Chicago, if you care to make copies of any of them. Unfortunately, some of my best plates were broken by Dr. Kuh, of Chicago, two years ago. I presume you have seen some of them, as they have been copied by Dr. Ashmead and others. Dr. F. G. Lydston, in his recent work on Genito-Urinary Diseases, is the only one, however, who has given me credit for any of them. If you will pardon me for taking up more of your time, I will give you a few notes on observations made while in India:

Fish.—A fish diet (if the fish are fresh) will not affect lepers. Milk alone will not affect them, but a mixed diet of fish and milk will in many cases cause the ulcers to enlarge, and the discharge from them to become profuse at times.

While I do not believe, as some do, that a fish diet will cause leprosy, will say that the rotten fish, as generally eaten by the natives of India and the Philippines, act as an important factor in the causation of the disease in districts where lepers abound. A general dermatitis is produced by the ingestion of decomposed fish. In this way the soil is prepared for the seed, and a man in this condition, if brought in contact with lepers, is more liable to take the disease than if his skin was in good condition.

Ulcers.—I believe it to be a great mistake to heal the ulcers by local applications, as is so often done. I noticed that in such cases the temperature generally went up to 101–104°, and the patient, who at first seemed to be doing well, suddenly passed away with diarrhea. I always keep the ulcers clean and depend upon other means to heal them.

Increase.—I believe the rapidity with which the disease increased in the Sandwich Islands was due to the fact that the natives ate poi from a bowl in common. In this way the mucous membrane of the mouth was infected. In India the increase was due to careless vaccination. Now, do not understand that I am an antivaccinationist; far from it. At the same time I will say I am opposed to vaccination as practiced by men sent out by the Indian government. They vaccinate men who have syphilis, leprosy, and other diseases. A week later they call and get the "scab" from the arms of any of their previous victims, and use it in the next village. In this way about 6,000,000 people are vaccinated annually in India. All I can say is, God pity those poor unfortunates.

Treatment.—To be brief: Chaulmoogra oil by inunction is good; internally, it is worse than nothing. Have seen them so nauseated after taking it that it was with difficulty I succeeded in stopping the terrible retching. In many cases arterial blood was brought up by the hard retching. Ichthyol is good in large doses. I increase the dose gradually from 10 minims to a teaspoonful, three or four times a day, until I notice the ichthyolic fetor. Watch the patient carefully but do not be afraid of large doses.

Bathing.—Bathing in water slightly acidulated with sulphuric acid I believe to be an excellent thing. Calcium iodide is another favorite, and my best results have been obtained by giving it and the baths. Of course no two cases can be treated alike.

* * * * * * *

If a report of the work done by the commission is issued in the future I would like to secure a copy if you can let me have it.

Apologizing for the length of this letter and trusting that you will command me if I can serve you in any way, I am,

Yours, very truly,

A. W. Hitt.

Dr. J. H. White,

Chairman Leprosy Commission, Washington, D. C.

[Letter from Dr. A. W. Hitt.]

15 West One Hundred and Third street,

New York, February 11, 1901.

Dear Doctor: I am sending you by express to-day a box of lantern slides showing some of the Indian leper cases. Some of these slides apparently do not pertain to the subject. The picture of the fern

tree, for instance, shows the amount of moisture in the air. After carefully studying the question I have noticed that wherever the ferns on these large trees flourish we also find a great many cases of leprosy. You will also observe a picture of the native barber. He uses the same razor to shave lepers, syphilitics, and the men who are free from these diseases. The razor is never cleansed further than wiping it on the corner of a dirty loin cloth. In this way, I believe, the disease is communicated to many. There is one picture of a man carrying two children to the village to be vaccinated. Lymph is often taken from the arms of lepers to vaccinate these children. * * *

There are four pictures taken from Impy's Book on Leprosy, showing two tubercular cases before and after having taken and recovered from erysipelas. * * *

If I can serve you in any way I assure you it will give me pleasure to do so.

With kind regards, I am, yours, fraternally,

A. W. Hitt.

Dr. J. H. White,
Chairman Leprosy Commission, Washington, D. C.

LEPROSY.[a]

By A. W. Hitt, M. D., *Chicago.*

As I read a paper on leprosy before this society some time ago, I will not take up much time with the history of the disease, but will endeavor to give you a few notes on symptoms, cause, and treatment. I believe that the picture presented to-night with the aid of the stereopticon will give you a better idea of the disease than anything I could say.

The poor unfortunate lepers are treated as badly or even worse than they were two thousand years ago. Last fall one poor fellow who was said to be a leper was lassoed like a wild steer and tied down like a wild beast by the marshal of an Indiana town.

Two years ago I was invited to attend the Ohio State Medical Association, in Columbus, to examine two girls who were said to have leprosy. They were hauled 50 miles through the country in a wagon, and when they arrived the cry of "Unclean! Unclean!" was set up, as it was in the time of Moses. They were compelled to sleep on the floor of a dissecting room in a medical college. Early the next morning they started for their home in Perry County.

While the people hold up their hands and cry "Unclean! Unclean!" they are doing nothing in the way of protecting themselves by isolating these cases.

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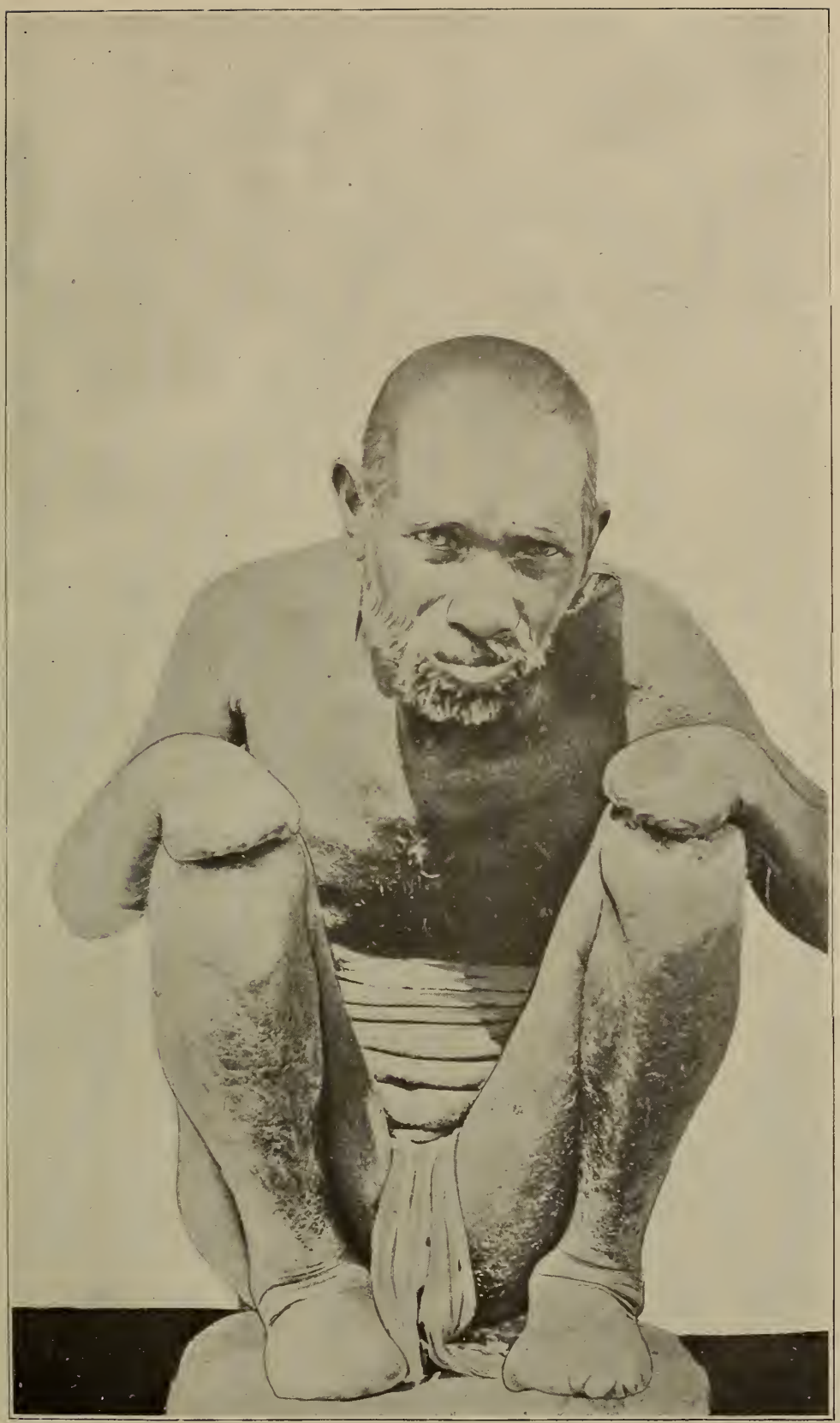
[a] Read before the Chicago Medical Society, September 29, 1897.

ILLUSTRATING "LEONINE ASPECT."

"Picture of the fern tree * * * shows the amount of moisture in the air."




Liu Yong
Ah Lan

There are now about 530 cases of leprosy in the United States, so it behooves us to be a little more active in this line of work.

Leprosy is to be found in almost every country in the world, and in most of these places is increasing rapidly. We have only to watch the daily papers and medical journals to see the truth of this assertion. It is demanding so much attention in Europe that it was found necessary to call a congress of leprologists to meet in Berlin during the coming October.

In a dispatch from Samoa via San Francisco it is stated that—

> several lepers from the Sandwich Islands managed to reach Samoa and have spread the disease among the native Samoans. The natives are now trying to check the disease. One leper died recently, and United States Consul Churchill ordered the house in which the leper lived and all the surroundings to be burned.

Leprosy was carried to the Sandwich Islands by the Chinese. There were doubtful cases as far back as 1848, but Dr. Hillebrand, who has practiced in these islands since 1851, says that the first well-authenticated case was reported there in 1858. As the natives had never heard of the disease and had no words to express it in the Kanaka, they called it "miapake"—or Chinese disease. It is said there is now one leper to every thirty, and some say one to every ten, healthy natives in these islands.

In a letter to Dr. Ashmead, of New York, Dr. Mouritz, of Molokai, says that place—

> is one of the best fields for observing the penalty the human race is paying for its apathy in dealing with leprosy. The lepers at Molokai number between 11,000 and 12,000, chiefly natives, but within a year or two the disease has begun to make inroads upon the white population.

Leprosy has increased in Colombia in an alarming manner. In November, 1890, there were about 18,000 lepers in that country. A recent estimate of the number of lepers there shows about 27,000 cases, or an increase of 9,000 or 50 per cent in seven years.

While the reports show that leprosy is not increasing in India, I fully believe that if we exclude the cases of leucoderma and syphilis, which were included in the reports ten years ago by the ignorant police who took the census, it will be shown that there has been an increase of 60,000 cases up to the present time. Many other instances could be cited to show that the disease is increasing rapidly in different parts of the world.

India has about 250,000 lepers, while China is said to have about the same number. British Guiana has 1,000; Trinidad, 860; Russia, 2,000; Egypt, 2,058; Malta, 73. South Africa, Madagascar, and other countries have quite a large number.

It is generally believed that only filthy people, who live huddled together like animals, have the disease. This is not the case, however, and while we admit that a majority of lepers are poor, and their sur-

roundings are far from what they should be, the physician, the priest, and even the king in his palace will fall a victim of the disease if brought in contact with it. "Pharaoh, king of Egypt, was smitten with leprosy," so the Talmud informs us, and when he died he was buried in the field of the kings and not placed in a tomb in the pyramids. The king referred to was probably Rameses IV.

King Uzzia also had leprosy. Robert Bruce, King of Scotland, died of leprosy in 1392.

Miss Mary Reed, an American missionary to India, while visiting her parents in Ohio a few years ago, discovered that she had contracted the terrible disease. Mr. Thomas Jackson, who is now a leper and has charge of the leper asylum in Dehra Dun, N. W. P., India, told me that he could not remember ever having been brought in contact with a leper before entering the asylum. He was for years clerk of one of the Indian railways, and in his work was obliged to handle money given in at the window by natives.

There are two types of the disease, the anæsthetic and the tubercular, which, when united, form what is called the mixed type. The same bacillus causes both forms. I believe that the type of the disease is determined by the channel through which the bacilli enter the body. Should they be deposited on the skin, especially in a weak place, and remain undisturbed, tubercular leprosy would be the result; while if the bacilli should be deposited or find their way into a wound I believe we would have the anæsthetic form.

SYMPTOMS OF NERVE OR ANÆSTHETIC LEPROSY.

The first symptom which attract the attention of the patient is a tingling or burning sensation in patches or in different parts of the body. The backs of the hands and the forearms are the parts thus attacked. Lancinating pains along the course of the nerves are next noticed, and the color of the integument changes. In some cases it becomes darker, in others the skin pigment is diminished and the part becomes lighter than the surrounding skin. Pemphigoid eruptions are commonly noticed. An erythematous rash appears over the affected parts. The pimples vary in size from that of a lentil to that of a pea. These spots spread peripherally and begin to fade first in the center. The patches gradually fade and the epidermis shows a tendency to desquamate after the drying up of the eruption. The complete cessation from the surfaces of these spots is looked upon by eastern authorities as a very important diagnostic point. Pilocarpine will not affect these spots, but the surrounding tissue will be covered with moisture. In some cases the spots are delayed and do not appear until the disease has been in the system for several days. Thin says: "The spots are never present on the scalp, and very rarely on the palms and soles."

The destruction of the nerves disturbs nutrition and the sense of feeling. Soon the most distressing part of the disease manifests itself, and the extremities and face are mutilated. The phalanges either drop off or become absorbed and disappear. The nose sinks in, and leaves a ghastly looking patient, whose face can never be forgotten. The fingers and toes become crooked and fixed.

The hair drops out from the affected parts in tubercular leprosy, while it becomes white in the anæsthetic spots of nerve leprosy and does not always fall. There is a great pain about the eyes, nose, cheeks, mouth, and limbs. The pain is much more severe during the night than during the day. After months or years of suffering the pain ceases and anæsthesia supervenes. An eye can be cut into without hurting the patient. The patient's health fails after years of suffering, he becomes anemic, and visceral complications arise. Amyloid degeneration of the kidneys and liver, with chronic diarrhea, finally puts an end to his suffering and miserable existence.

SYMPTOMS OF TUBERCULAR LEPROSY.

The patients generally suffer with attacks of fever and vertigo. They also perspire profusely. When the disease is well advanced the tubercular or nodular masses on the face, with the greasy, shining appearance, cause the patient to look simply frightful. This is the leonine appearance, commonly noted by both modern and ancient writings.

Thin says:

When the parasite has established itself in the skin, the first effect, before there are any changes observable to the eye, is to set free a poison which produces more or less marked results in different individuals, causing the so-called prodromata or premonitory symptoms of leprosy. After a time the multiplication of the parasite causes a vasa-motor paralysis of the part in which it grows, producing the exanthem of tubercular leprosy.

The further development of the bacillus leads to direct changes in the corium itself, causing swelling, thickening, infiltration, and discoloration, which vary according to the extent and rapidity with which it grows. This forms the so-called tubercular stage. The breaking down of connective tissue and the destruction of blood vessels produced by this excessive growth of bacilli lead to ulceration—the ulcerative stage of tubercular leprosy. Finally comes a time when, in most cases, the bacillus leads to leprous deposits in the liver and spleen, and the patient becomes exhausted from the constant discharge from the ulcers and by visceral complications, to which he eventually succumbs, unless in the meanwhile he has been suffocated by the leprous growth in the larynx or has died of some acute intercurrent malady.

BACTERIOLOGY.

The bacillus lepræ has been found in almost all the tissues of the body in persons affected with leprosy, but it is in the cells of the diseased nerves and skin that the bacilli will be discovered in greatest abundance. The lepra bacillus resembles that of tuberculosis. In length it is about one-half to three-fourths the diameter of a human

blood corpuscle. As it has not been found free in the blood, it is doubtful whether it will live outside the cell wall.

The lepra bacillus causes both forms of the disease. It is true that food and climate act as important factors in the cause of the disease, but the bacillus of leprosy is now regarded by all observers as the true cause.

Dr. Jonathan Hutchinson says that a fish diet will cause leprosy. Bacilli lepræ have not been found either in fresh fish or dried fish; therefore I can not believe that eating fish alone will cause the disease. I consider, however, that it is an important factor in the causation of leprosy in India, where for three months the rain falls in torrents at times and causes the rivers to overflow their banks and cover the land in all directions. When the water recedes little puddles are left in the roads, the fields, and even in the yards of some of the places. In these mud holes are hundreds of little fish. The children wade and catch the minnows or fish by straining the mud through their fingers. They are thrown into a basket and soon decompose under the tropical sun of India. They are made into a paste or preparation called "nga-pi," which is simply a mass of putrid fish. Eating this paste produces a dermatitis, which in turn makes it easy for the bacilli to find a lodging place in the skin when brought in contact with it.

I have noticed one peculiar thing in this connection. Fish, as I have stated, will not affect a leper, neither will milk alone; but when we give a mixed diet of fish and milk the ulcers enlarge and the patient grows worse. I do not know why this should be the case, unless it is because the combination in someway helps to produce better media for the multiplication of bacilli. Almost every article of diet used has in turn been unjustly accused of having caused leprosy. I believe that the lack of food, or anything else that has a tendency to lower vitality, will act as an important factor in the causation of leprosy. The Kabirpauthis of India, who abstain as a rule from the use of meat, show the largest ratio per 10,000 of any religious sect in India, while the Jains, who always abstain from the use of animal food, going so far as to tie a piece of flannel under their nostrils to prevent insects being inhaled and killed, show next to the smallest ratio. On the other hand, the Christians and Mohammedans, who eat meat and live on a mixed diet, show a high ratio, while the Sikhs, who also live on meat and a mixed diet, show the lowest of all in India, viz, 1.9 per 10,000. We gain nothing by classifying them according to their religious castes, which allow only a certain kind of diet.

The quantity and quality of food, with unhygienic surroundings, help to produce the disease, as the following will show: The number of lepers per 10,000 in rich castes of India is 0.84; in middle castes, 2.3; in poor castes, 3.05.

After studying the matter carefully I have come to the conclusion

that climate plays a very important part in the causation of leprosy. We find the majority of the cases in either a cold, damp climate, or a hot, moist climate. There has been a leper asylum in Iceland for over two hundred years.

In the following table it will be seen that as the rainfall increases the number of lepers increases in proportionate degree. We will begin with the western portion of India, where the amount of rainfall is small, and go to the eastern part, where there is an immense rainfall.

	Average rainfall.	Number of lepers per 10,000 inhabitants.
	Inches.	
Rajputana (very dry)	7	1.4
Hyderabad	30	3.4
Oudh	38	3.9
Bombay Presidency (Northern)	74	5.3
Burmah	105	11.8

Most of the cases in the United States are to be found in the Southern States and along the Pacific and Atlantic coasts.

I believe that a majority of leprologists hold that leprosy can be communicated by inoculation. I reported several cases some time ago in which the disease had been taken in this way. The case of Kenua, the condemned murderer, in the Sandwich Islands, is well known to most of you. I have not time to go into the case further than to say he was inoculated with leper tissue and lymph by Dr. Arning, and died from the disease about six years later. Cases of accidental inoculation could be mentioned by the dozen.

In speaking of vaccination from the vesicle of a leper, Dr. Ohmann-Dumesnil says: "This is certain to transmit the disease in nearly every case." I know of several cases where children have become infected by being vaccinated with the lymph taken from the arms of lepers.

Mr. William Tebb, in his interesting book on the recrudescence of leprosy, reports a case in which about 60 school children out of a class of 150 who were vaccinated with lymph taken from the arms of infected persons were attacked by leprosy.

From 3,000,000 to 6,000,000 children are vaccinated in this way every year in India. Who can tell what the result will be?

Leprosy is not a contagious disease in the ordinary sense of the word. It can not be contracted in the same manner as smallpox and yellow fever, but a person must either come in close contact with the infected person or something on which the bacillus has been deposited. Leprosy is not hereditary. There is no well-authenticated case on record, so far as I am aware, of a child having been born with the disease.

The average life of a man suffering with the anæsthetic type of lep-

rosy is about eighteen and one-half years, while in the tubercular type the average is about nine and one-half years. This applies to India. In South Africa and in cold climates the average is much shorter.

SEGREGATION.

The question is often asked how we are to get rid of the cases we now have. I answer that we must do as other countries have done, and segregate these unfortunates. In France alone, in 1226, during the reign of Louis VIII, there were 2,000 leper asylums, while the number of asylums in all of Europe was about 19,000. By closely confining their lepers these countries have almost driven the disease out of the land. So long as segregation was practiced they succeeded admirably, but when they felt safe and became apathetic it again commenced to increase.

Our next-door neighbors, Mexico, Cuba, and Venezuela, have several thousand cases of leprosy. Considering the rapid means of transportation between these countries and the United States, it seems that our quarantine laws should be more rigidly enforced.

As new territory is about to be annexed to the United States which will bring with it several thousand lepers, we, as medical men, should use our influence to see that these laws are enforced.

No emigrant coming from an infected country should be allowed to land without first having undergone a thorough examination for leprosy and other infectious diseases. As the disease may be in its first stages and hard to detect, we should demand a second thorough examination for leprosy before granting naturalization papers.

The American Public Health Association, which met in Brooklyn, N. Y., October 22–25, 1889, passed a resolution requesting—

quarantine commissioners of ports having connection with Cuban ports to exercise the same vigilance with regard to leprosy that is already observed in the case of yellow fever during what is known as the quarantine period.

Supervising Surg. Gen. John B. Hamilton, on December 23, 1889, issued a circular to the officers of the Marine-Hospital Service, instructing them to detain all lepers at quarantine stations and prevent their landing in this country. All such cases were to be returned to the country whence they last sailed. This order was approved by Secretary of the Treasury William Windom and President Benjamin Harrison.

In addition to the above order, the United States Government, with the cooperation of the States now infected, should establish a leper asylum or colony in a district suitable for such cases and send all lepers to it.

TREATMENT.

It would be impossible for me at this time to speak of all the drugs which have been used in treating leprosy. Among the natives of India chaulmoogra and gurgan oils seem to be the favorites. The great

difficulty in using chaulmoogra oil is that it nauseates the patient so that it can not be retained and upsets the stomach so that he can retain nothing else. In small doses it is not so bad, but when given in doses large enough to be of any value as an alterative it is hard on the stomach. Good results are sometimes obtained from inunctions of chaulmoogra oil.

Arsenic in recent cases is sometimes of service. Danielssen used iodide of potassium for forty years with very good success. Applications of pyrogallol, chrysarobin, resorcin, and ichthyol have been highly recommended by Unna.

Surgical and other wounds of lepers generally heal rapidly. It is not a good idea to heal these ulcers by simple local applications of ointment or antiseptic dressing. Of course the ulcers should be kept as clean as possible, but an alterative should be given in every case before attempting to heal up the ulcers; otherwise the temperature of the patient is likely to go up to 102° or 104°.

I prefer the iodide of calcium to the iodide of potassium, as we do not have the disagreeable stomach disorder following its employment and as it is a better tissue builder. The iodide of calcium can be given in four-grain doses after each meal and before retiring. It is better given in combination with bromide of calcium and sirup of sarsaparilla. I have found ichthyol to be a very good remedy in tubercular leprosy in addition to the iodide of calcium. I begin with ten-drop doses, which are gradually increased until a dram is taken at a dose. This can be kept up for some time without any toxic effects.

Bathing is very necessary. In some cases it is well to put enough sulphuric acid in the water to make the bath slightly acid. I believe that separate baths should be arranged for the two types of the disease, and that patients with the anæsthetic type should not be allowed to use the same baths with the tubercular cases, as this increases the liability of their taking on the mixed type of leprosy.

While I have had no experience with the serum treatment, I believe much good may be expected of it. I reported a case last year of a tubercular leper, who, after recovering from an attack of smallpox, found that his tubercles and every sympton of leprosy had disappeared. Dr. Impey, in his handbook on leprosy, describes two cases in which decided improvement had taken place after an attack of erysipelas.

A 10 per cent solution of pyrogallic acid painted over the anæsthetic spots often does good, and the anæsthesia disappears. In some cases where the ulceration is very extensive and the patient's vitality low it is hard to heal the ulcers.

My experience lately has led me to believe that better results may be had in the treatment of these ulcers by using nosophen (tetraiodophenolphtalein). It is decidedly the best antiseptic dusting powder I have ever used in treating ulcers of any nature. It is nontoxic and

does not irritate. To exert its antiseptic action nosophen must first be converted into a soluble form. Such a conversion is brought about by the free alkali of the human secretions, the lymph and the blood. The soluble sodium salt of nosophen, antinosine, is thus originated and has the opportunity of exerting its bactericidal properties.

I believe that many cases of the disease can be permanently arrested and the mutilation, the most distressing symptoms of the disease, done away with. Many of these poor unfortunates can be returned to their families in such a condition that they will be able to support them, and at the same time not contaminate them. Much earnest work remains to be done in this line, and we can only hope to be successful by giving more of our time, and money if need be, to the study of this loathsome disease.

[Letter from Surg. R. D. Murray, M. H. S.]

OFFICE OF MEDICAL OFFICER IN COMMAND,
MARINE-HOSPITAL SERVICE,
Key West, Fla., November 15, 1900.

GENTLEMEN: When I received your circular letter of February 28, I began a paper recounting my personal experience with leprosy, and to collect names, residences, etc., of lepers, but when informed by Dr. Porter that he would send you a complete report for the State my interest in the matter began to lag. My favorite daughter then showed signs of fatal illness and my enthusiasm over things temporal cooled down. My child's illness has depressed me, and prevented me from caring for private patients—thus I have been unable to get points, for leprosy is a private matter in most instances, and for a lifetime in some.

I write thus much to show you that I am and have been interested in your investigation, and in apology.

When I first came to Key West, in 1871, I was confirmed in my earlier notions as to continued presence of yellow fever here, and was soon informed that convulsions, cancer, and infantile tetanus were common diseases. Consumption and malarial fever were unknown, but "slow fever" and "three-day fever" were alluded to familiarly. Under the breath it was hinted that leprosy existed here. (These points were given me by ex-Senator Mallory, former Confederate secretary of the navy.) Some talk with doctors of that day confirmed all that the Senator had told me except as to yellow fever; but as that disease was not recognizable by said doctors unless there was black vomit, it was fair to accept all as true.

It was my fortune in a few years to treat the first case of tetanus in an adult, and the first case of infantile tetanus that up to then had survived the disease (both persons are now living), and to attend in

due form a woman who was delivered of a boy baby. The latter job was a decided innovation in Key West, as for all time before women had cared for women in travail, and no lady would have a doctor attend her in childbirth.

In 1875, following Bowditch's assumptions about undrained subsoil, I wrote a paper showing that consumption had not been here and could never exist here; alas, the northern and Cuban consumptive came, and, in 1885, this town was a phthisical town, and so continues.

Cancer, "slow fever," "three-day fever," and tetanus are yet well known, but it is remarkable that convulsions, fits, spasms, etc., are rarely heard of.

The practically constant presence of yellow fever and leprosy, and the impossibility of remembering the deaths, impelled me in 1874 to influence Hon. J. J. Philbrick (the next best friend this town ever had) to pass an ordinance in the city council providing for registration of births and deaths. I tried in the same year to have a State board of health law enacted, visiting Tallahassee for the purpose, but was prevented from doing a good thing by some schemes of land-grabbing politicians. Had my hand been shown in the local bill the law would not have been passed, and Key West would not have the distinction of being the first town in Florida to have a death-certificate and burial-permit law. I had much trouble for two years to have the law respected, but, by being very courteous to Sexton McHugh, I gained my wishes, and the law soon got too old for anyone to think of proposing its repeal. Some of my efforts in its enforcement were amusing; one instance nearly tragical to me. I regret to state that the execution of the law is not productive of the benefits I hoped for. I think all the leprosy death certificates recorded are signed by me. For family reasons doctors write pneumonia, blood poisoning, athrepsia, and other obscure titles when a leper dies.

Soon after I was stationed here, in 1872, I heard of Mrs. V. as having leprosy—the matter has affected me socially and seriously—although I never saw her and she is still living. During my first detail here I saw about twenty lepers, treated some of them, but my notes are too far away for me to refer to them. During my second detail, from 1888 to 1893, I saw as many more, treating five of them, generally purchasing the so-called specifics myself.

In 1890, while serving as local health officer, I had one colored woman returned to Nassau, the first instance here where a leper was refused a landing.

In 1888 Dr. E. C. came here and busied himself so much about the disease as to find about 100 cases. He disputed all quarantine procedures, and in one instance got into trouble, viz: In 1873 I had told Mrs. H. that she had vitiligo, and would always have it. C. said she had leprosy, and while I was in the Manatee epidemic Mr. H. horsewhipped

him. Mrs. H. is living. C. went to Tampa, and in four days, in September, found four lepers. Subsequently he had a column put in the New York Sun about the 100 lepers in Key West who were making the cigars for the town. At a meeting of nearly all the physicians, held soon after, I proposed to smoke all the cigars lepers could make, and found I knew more about the disease than the others did. In the talk I stated that Dr. C. was a leper. A kind newspaper published the last remark, and soon after Dr. C. challenged me to fight a duel. I declined the banter and met him afterwards socially. In 1893 he died in his cabin on ——— Island, West Indies, and J——— and his two sons burned cabin, trunk, and corpse. Thus much do the people in the West Indies (and here) fear leprosy.

Dr. C. claimed a former intimate acquaintance with the priest, Damien, who died with leprosy in Molokai a short time before, and published a newspaper essay in which he described four varieties, viz, tubercular, anæsthetic, nervous, and psychic, i. e., affecting the brain. I frankly admitted the existence of the fourth form, being aware of many (too many) who show signs of being affected by it.

At the conference referred to I learned that the U. boy who had been sent to San Diego baths in Cuba by Dr. B., and whom Dr. Burgess would not permit to return in spite of Dr. B.'s certificate of scrofula, etc., had actually regained his home here via New York and rail. The Cuban doctors talked Spanish, and I could understand them.

In 1892 Dr. Porter rented a room for Henrietta Gaiter, paying $30 per month. The State board of health objected to paying after five months, and she died in the poorhouse.

I have for a long time insisted on at least registration of lepers, and in 1894 Dr. Porter, at my instance, had the State board of health pass an order for a secret register in control of the State health officer, but three months afterwards a member of the board forced the abrogation on the grounds that the rule was against personal liberty and good policy. On this, Dr. Porter proposed to resign, and I think would have done so but for my influence.

Mr. T. was vaccinated in 1871 during the epidemic of smallpox. In 1876 he had what was called writer's palsy, and began to wear gloves. In 1884 he knew what he suffered with, and jumped off the steamer *Cochran* in the night. His wife suffered too. I treated her until I went to Chandeleur. She died alone, and was dead for three days before the fact was known. A few years ago the wife of a prominent man here died with what was called blood poisoning, but the husband and her friends knew what she had. She had been intimate with T., and with his wife, up to 1886.

In 1890 I saw G. E., age 12; had erythema nodosum; Dr. T. said leprosy, but treatment carried off all the nodes, and the boy returned

to the street in apparent good health. He was sent away for treatment, and after much travel and expense, died in 1896. His father has since died by his own hand, to save time, and others of the family are reported to be affected. This is a sad, pitiful history. Family lives away from here.

In May, 1888, I made diagnoses in cases of H. M., age 27, and G. F., age 28, seamen. M. went voluntarily to his father's house, on one of the Bahama Islands, and died; I treated F. off and on when he had no money, and in March, 1892, he died.

K. J. married a girl some twenty years ago, and after he was suspected. He died, after she bore him two children, about twelve years ago. The woman remarried, and she and the two children are reported well. His father, age 60, is now confined to his house with the disease.

L. N. suffered for years in his brother's house and died about four years ago. His brother and large family of children were perfectly clean last winter when I saw them, but the fair and bright children can not attend any school in town.

* * * * * * *

In 1890 a Cuban countess suffering with Morvan's disease came here from Habana. I assured her landlady that the woman had leprosy, and she declined to give her and her retinue further accommodation. I helped the dear lady much by cutting off the Chinese finger nails, against her protests. She went to Tampa and in a half year returned to Cuba and died with leprosy, according to Dr. Burgess.

In March, 1900, M. S., white, age 22, called on me for treatment. She had lost seven first joints from her fingers, and had other signs. I gave a guarded prognosis, but confirming her fears, and before the week was out she was sent to her father's home at a distance. She had suffered for four years, had been treated by a doctor for two years, and had served in the house of a man whose wife's mother, Mrs. B., has the disease. I know nothing about contact, but can surmise much.

In 1890 I made as full a report as I could to the Census Bureau, and soon after gave a fuller statement to ex-Passed Assistant Surgeon Armstrong, who essayed to work up the subject.

In 1876 I began to talk about a leper home, but could never get a chance to visit the Florida or other islands to pick out a location. Tortugas was utterly unfit. However, when I saw Round Island in 1883 I conferred with Col. William Roy, Judge William Wright, Captain Gibson, and others in New Orleans. We proposed to build the home on a cottage plan, keeping ultimate purpose in view. We did not receive the support expected, and all except myself soon forgot all about the scheme.

Lepers should be placed in an isolated village—not an asylum, tem-

ple, or palace. Separateness and self-dependence should be assured, with pigs, chickens, pets, gardens, swings, and other family appurtenances.

Lepers shun people instinctively, but remain human for a long time; and lepers fear lepers. No leperphobe has more fear of catching the disease than a leper has fear that he may transmit it. I believe every one would willingly go to a village home if assured of the chance of living apart from others. For the United States one home will not be sufficient. Louisiana alone has enough lepers to keep one set of officials and one outfit busy.

The disease came here earliest from the Bahama Islands, from which nine-tenths of the English speaking whites and negroes came. After 1868 some cases probably came from Cuba. The cases in English white and black families are perhaps all known if recognizable, but there are hints and rumors of cases among Cubans which can not be verified, because Cuban doctors are noted for dodging plain issues. Except the countess and the U. boy, I think no others have come from foreign ports since Surgeon-General Hamilton's order August, 1889, which order made leprosy quarantinable.

In many instances the point of origin of a case can be guessed at, but in some cases which I have tried to know all about I have failed to get a hint of contact or even association. But lepers are like rats and rattlesnakes—where there is one, there is or was another not far off. Thus where 20 are listed for the town, it would be decent and advisable to make provision for forty. And in this estimate the Cubans have not been carefully considered.

I insist that it is fair to state there has been an average of one death a year here (from leprosy) for the past thirty years. I can count nearly half that number on my fingers, and I have not been here for one-half that period.

It is also proper to state that several persons here are afflicted with vitiligo, which by some experts here is called leprosy. I know three persons who have only vitiligo. I do not know what that is; but these persons are not lepers. The white blotching of the exposed skin is not uncommon in mixed races on the Gulf shores and occurs in people in whom a mixture of race can not be proved.

Local names for the disease here and in the Bahamas are "sun surface" (in reference to the dark blotches on the skin in the first stage), "laps" (a shortening of the name), and "Coco Bay" (in allusion to a place in the Bahamas where it was common as at Rock Sound).

The conditions and social relations of the few unfortunates here is not a happy one, and of the very poor is pitiable, but the disease being so unpopular and so much dreaded by every one, there is and will be no hope of any betterment through public or private agencies. The afflicted worry and fret for a while when first they observe the sun

surface or numb finger ends, and in time disappear from common view. Meantime the bacillus works its quiet, secret, and fatal doom, afflicting whom it pleases, without warning or hope of relief.

I should have said higher up in this random letter that for some years I sent to the State health officer of Florida all the newspaper clippings I could find on the subject, with the hope of having him establish a leper home on one of the Florida Keys. Mosquitoes and lack of fresh water were the only worries I ever had. Mosquitoes can be killed and fresh water can be made. The saving in housing and clothing and the comfort of the climate give the keys a big lift as to availability.

I have received no information from Dr. Q.; have received no new points from Dr. J.; have received some confirmations from Dr. T., and from Dr. B. I have received three reports and some foreign data.

My report is lacking in positive details, but I think it is reasonably reliable. Dr. J. proposes to write to you. He promised to do so in May last. I now regret that I could not talk more with the neighbors during the summer.

I have kept a sort of copy of my report of individual cases, and if you wish incidental information I will try to supply it. I have been tardy in reporting the conditions here, because I have disliked to reflect against a town that has not been unkind to me, but what I have written is true and should be known where the truth will do good in the prospect of comfort to the already afflicted and the safety and peace of mind of the healthy.

Respectfully,

R. D. MURRAY,
Surgeon, Marine-Hospital Service.

The LEPROSY COMMISSION,
Washington, D. C.

[Reprinted from public health reports, December 30, 1898.]

REPORT ON LEPROSY IN THE HAWAIIAN ISLANDS, NOVEMBER 29, 1898.

By Surg. D. A. CARMICHAEL, U. S. M. H. S.[a]

Origin.—A number of statements are made relative to the introduction of leprosy into the Sandwich or Hawaiian Islands. Some contend that the disease was brought by the natives themselves, who are an offshoot of the great Polynesian race, the Mahori branch, that inhabit the islands that lie to the south and west. It has existed in the islands of Malaysia for ages, and in Java and other islands of the great archipelago.

[a]Detailed by the President for duty at Honolulu, in accordance with the act of Congress approved February 15, 1893, with instructions to make a special report on leprosy.

There is a record that in 1778 a Hawaiian chief named Kahaina visited China, and it is also stated that there was communication between the natives and those inhabiting other islands in Polynesia as far back as the twelfth century. In 1798 the North Pacific whaling fleet began to visit the Sandwich Islands, and in subsequent years made Lahaina, on the island of Maui, and Honolulu, or Oahu, their principal ports of call, and it is claimed that leprosy was brought here by the mixed crews—negroes, black and white Portuguese, and Chinese—of the whalers. In 1810 the Hawaiians began to export sandalwood to Chinese ports in foreign-built vessels.

In a report made to the Hawaiian board of health in 1886 by Dr. Arthur Moritz, the physician in charge of the leper settlement on Molokai, it is stated that one of the earlier missionaries in Honolulu, who came to the Hawaiian Islands in April, 1823, the Rev. Charles S. Stewart, recorded in his diary a few weeks after his arrival:

> Not to mention the frequent and hideous mark of a scourge which more clearly than any other proclaims the curse of a God of purity, and which, while it annually consigns hundreds of this people to the tomb, converts thousands while living into walking sepulchers, the inhabitants generally are subject to many disorders of the skin, and the majority are more or less disfigured by eruptions and sores, and many of them are as unsightly as lepers.

On July 4 of the same year the same observer notes:

> Indeed, we seldom walk out without meeting many whose appearance of misery and disease is appalling, and some so remediless and disgusting that we are compelled to close our eyes against a sight that fills us with horror. Cases of ophthalmic scrofula and elephantiasis are very common.

The Rev. W. P. Alexander, who came here in 1833, states that the first case of leprosy that he saw on the islands was in a native Hawaiian on the island of Maui, and that he had heard several years before that a chieftess in Lahaina, on the same island, was affected with the disease.

Mr. Brickwood, a resident of these islands in 1840, and who had been familiar with the appearance of leprosy in Egypt, recognized the disease in a native of Honolulu.

In Dr. Alonzo Chapin's description of the islands, published in the American Journal of the Medical Sciences, in July, 1838, is the following:

> Foul ulcers of many years' standing, both indolent and phagedenic, everywhere abound, and visages horribly deformed, eyes rendered blind, noses entirely destroyed, mouths monstrously drawn aside from their natural positions, ulcerating palates, and almost useless arms and legs mark most clearly the state and progress of the disease among that injured and helpless people.

The descriptions given by the Rev. Mr. Stewart and Dr. Chapin were intended to describe the ravages of syphilis, which had been introduced among the natives by the white sailors who first visited these islands, but the pictures presented might with equal force apply to leprosy, foul ulcers of many years' standing being common in ulcerating tubercular leprosy, and the distorted visages and useless arms

and legs being common in the anæsthetic type of the disease. According to Dr. Hillebrand, leprosy was introduced into Honolulu by the Chinese in 1848, and he claims to have seen the first Hawaiian leper five years later; ten years later the disease had spread considerably in the immediate neighborhood of this case, and it is possible that the Chinese carried the disease to other points in the islands.

Mr. R. W. Meyer, for many years agent of the Hawaiian board of health at the leper settlement on Molokai, in his report for 1886 states that he arrived at the islands in 1850, that in 1857 he first heard of the appearance of leprosy among the natives, and that in 1859 or 1860 he saw the first case of leprosy in a young native who died with it in less than three years. The young man's mother took care of him, and, probably in 1868, she showed signs of leprosy and died a leper at the settlement. The Chinese generally get the credit for its introduction, although this is denied by many observers, and it is a singular fact that few Chinese on these islands have the disease in comparison with the large number of cases which have occurred among the native Hawaiians.

Restrictive measures.—A board of health was first organized on December 14, 1850, by the order of King Kamehameha III, to aid in the preservation of the public health and for the cure of contagious, epidemic, and other diseases, and more especially cholera. Until the close of 1863 and the beginning of 1864 no measures were taken by the Kingdom of Hawaii for the suppression of leprosy. At the beginning of 1864 the spread of the disease in Honolulu and other places in the islands had awakened public apprehension, and in 1865 the legislature of the Kingdom of Hawaii enacted a law to prevent its spread. The act is here quoted in full in order to show the authority relative to segregation conferred by it.

AN ACT to prevent the spread of leprosy, 1865.

Whereas the disease of leprosy has spread to considerable extent among the people, and the spread thereof has excited well-grounded alarms; and whereas, further, some doubts have been expressed regarding the powers of the board of health in the premises, notwithstanding section 302 of the civil code; and whereas, in the opinion of the assembly, section 302 is properly applicable to the treatment of persons afflicted with leprosy; yet, for greater certainty and for the sure protection of the people,

Be it enacted by the King and the Legislative Assembly of the Hawaiian Islands in the Legislature of the Kingdom assembled:

SECTION I. The minister of the interior, as president of the board of health, is hereby expressly authorized, with the approval of the said board, to reserve and set apart any land, or portion of land, now owned by the Government, for a site or sites of an establishment or establishments to secure the isolation and seclusion of such leprous persons as in the opinion of the board of health or its agents may, by being at large, cause the spread of leprosy.

SEC. II. The minister of the interior, as president of the board of health, and acting with the approval of the said board, may acquire, for the purpose stated in the preceding section, by purchase or exchange, any piece or pieces, parcel or parcels of land, which may seem better adapted to the use of lepers than any land owned by the Government.

SEC. III. The board of health or its agents are authorized and empowered to cause to be confined in some place or places for that purpose provided all leprous patients who shall be deemed capable of spreading the disease of leprosy, and it shall be the duty of every police or district justice when properly applied to for that purpose by the board of health or its agents to cause to be arrested and delivered to the board of health or its agents any person alleged to be a leper, within the jurisdiction of such police or district justice, and it shall be the duty of the marshal of the Hawaiian Islands and his deputies, and of the police officers, to assist in securing the conveyance of any person so arrested to such place, as the board of health or its agents may direct, in order that such person may be subjected to medical inspection, and thereafter to assist in removing such person to a place of treatment, or isolation, if so required by the agents of the board of health.

SEC. IV. The board of health is authorized to make such arrangements for the establishment of a hospital where leprous patients, in the incipient stages, may be treated in order to attempt a cure, and the said board and its agents shall have full power to discharge all such patients as it shall deem cured, and to send to a place of isolation, contemplated in Sections I and II of this act, all such patients as shall be considered incurable or capable of spreading the disease of leprosy.

SEC. V. The board of health or its agents may require from patients such reasonable amount of labor as may be approved of by the attending physicians, and may further make and publish such rules and regulations as by said board may be considered adapted to the condition of lepers, which said rules and regulations shall be published and enforced as in sections 284 and 285 of the civil code provided.

SEC. VI. The property of all persons committed to the care of the board of health for the reasons above stated shall be liable for the expenses attending their confinement, and the attorney-general shall institute suits for the recovery of the same when requested to do so by the president of the board of health.

SEC. VII. The board of health, while keeping an accurate and detailed account of all sums of money expended by them out of any appropriations which may be made by the legislature, shall keep the amounts of sums expended for the leprosy distinct from the general account. And the said board shall report to the legislature at each of its regular sessions the said expenditure in detail, together with such information regarding the disease of leprosy, as well as the public health generally, as it may deem to be of interest to the public.

Approved this 3d day of January, 1865. KAMEHAMEHA.

Station at Kalihi.—On November 13, 1865, a hospital with suitable buildings was established and opened at Kalihikai, on the island of Oahu, and distant from Honolulu about 3 miles. This station was designed for the reception, inspection, and treatment of persons afflicted with leprosy. Mild cases, after the diagnosis had been made, were to be treated here, and the more severe or incurable cases were to be transferred to the site recently purchased at Kalawao, on the island of Molokai. On the opening day 62 persons were present for examination, and inspection found among this number 43 lepers. In 1866, according to the reports furnished the Government, the number of lepers on the different islands of the group was as follows:

Hawaii	75
Maui, Molokai, and Lauai	112
Oahu	80
Kauai and Niihau	7
Total	274

This hospital was maintained until 1875, when it was abolished and a house in town on Nunanu street substituted. During its existence about 40 lepers died there, some 10 deserted, and many passed through its portals to the leper settlement on Molokai.

There was no marked change in the condition of affairs for some years. The system of mild segregation was kept up, and the number of lepers examined and sent to Molokai varied from year to year. There was a marked increase in the number sent to the settlement in the years 1869, 1871, 1873, 1875, and 1878. In 1881 the receiving station for lepers, as it was then called, was removed to Kakaako, a suburb a mile to the southwest of Honolulu. On November 5, 1885, the Queen Kapiolani Home was opened, near the receiving station, for the reception of nonleprous female children of leprous parents. In 1889 the receiving station was once more removed to its present situation and not far from its original site in 1865, at Kalihi, called Kalihi-Punhale. Up to 1887 all lepers and suspects examined at the receiving station were passed upon by one physician, but in that year a medical board of three was appointed. All of the suspects reported to the board of health were taken to this station from the different islands in the group and examined by the board. At the present time there are six physicians on this board, and each is required to record his individual diagnosis, and all must agree before a suspect is consigned to Molokai. This station now comprises buildings for the reception of suspects and treatment of lepers, offices, dispensary, bacteriological laboratory for the special study of leprosy and other contagious diseases, and on the west side of the reservation, some distance from the other buildings and isolated by high palings, is the Queen Kapiolani Home for female nonleprous children born of leprous parents, which is under the charge of the Sisters of Charity. All of the scientific examinations of lepers and much of the experimental treatment is performed at this station, and is under the immediate charge of Dr. L. F. Alvarez, who has an international reputation as a skilled leprologist.

Leper settlement on Molokai.—In September, 1865, the spit of land on the northern or windward side of the island of Molokai was chosen as a suitable site for the establishment of a settlement for the segregation of lepers. The site is probably one of the most suitable and isolated that could have been chosen for such a purpose. It is surrounded on the north, east, and west by the sea, and the base or southern side is placed beneath a steep pali or precipice from 1,800 to 2,000 feet high, which discourages communication with the rest of the island. Near the center of this tongue of land is the extinct crater of Kahukoo, 493 feet above the sea level, which, when active, formed with the erosion from the adjacent mountains and valleys the plain on which the settlement is now located. This plain has an area of about 8 square miles, and its breadth at the base where it joins the mountain chain is $2\frac{3}{4}$ miles, at the center $2\frac{1}{2}$ miles, and seaward or northward about 1 mile.

The soil is composed of lava rock, disintegrated lava, and ocean sand, and with abundance of water is, like most soils of volcanic origin, very fertile.

The first settlement was at Kalawao, on the eastern side of the spit of land. It lies close to the mountains at the rear and is much exposed to the northeast trade winds. Kalaupapa, the more recent and larger settlement, is situated on the plain to the westward, is further removed from the steep cliffs, and is somewhat protected from northeast winds by the crater of Kahukoo. The shore on the eastward is rugged and difficult of access. On the westward it is easier of approach and has more shelter. One and three-quarters miles seaward of Kalaupapa is the small village of Iloki, and midway between Kalaupapa and Kalawao, and close in to the base of the mountain, is the village of Makanaupapa, both included in the leper settlement. No trees grew originally on the plain and only coarse grass on the Kalaupapa side, but efforts have been made from time to time to plant different varieties, and some success has been obtained.

The mountain range which shuts off the settlement on the island side is bold and rugged and is continued east and west the whole length of the island, reaching toward the eastward an elevation of 3,000 or 4,000 feet. Adjoining the settlement are the valleys of Waikolu and Waihauau. Water is supplied from the Waikolu Valley and piped from thence to the settlements. Storage reservoirs are placed at different points as a reserve in case of accident to the main supply. As already noted, the site was chosen in 1865, and the settlement was opened for the reception of lepers in the following year. The first establishment was at Kalawao, and here the hospital, different churches, and the Baldwin Home for leprous boys are located.

When the board of health first opened the settlement, and for many years afterwards, much difficulty was experienced from the presence of persons who owned parcels of land in this tract and who were called Kamainas or old settlers. They were not subject to the laws governing lepers, and were free to come and go from the settlement at will. Their influence was detrimental to the discipline of the place, and association between them and the lepers was a weak spot in the system of segregation. Communication with other parts of the island was maintained by climbing the steep trails which led up the pali at the rear of the settlement.

The Hawaiian government has secured the property owned by those Kamainas, and they have been removed from the settlement. Molokai is probably the most complete settlement of its kind in the world. It has hospitals, churches, homes for leprous children, male and female, stores, market dispensaries, cottages for leper residents, jail, storehouses, etc. The majority of the lepers live in cottages built by themselves or by the government, and in the settlement there is a total of all buildings of 716.

The lepers are supplied with a liberal ration by the Government, which for one week comprises the following: Beef, 7 pounds; salmon, 5 pounds; fresh fish, 7 pounds; pai-ai, 1 bundle, 21 pounds net (a native food prepared from the root of the colocasia esculenta, often written "poi"); rice 9 pounds, with 1 pound of sugar; bread, 8½ pounds, with 1 pound of sugar; flour, 12 pounds, with one pound of sugar.

Children born at the settlement of leprous parents receive one-half of the above ration.

Monthly rations are also issued of soap, salt, matches, and kerosene oil. Each leper outside the homes receives a clothes-ration order of the value of $5 every six months, on the 1st of January and July in each year. Many of the lepers have friends outside who supply them with clothes and money. The Bishop Home for leprous girls and the Baldwin Home for leprous boys draw their supplies of food directly through the board of health as required.

The cost of the settlement to the Government is about $67,000 per year, and the amount expended for segregation and transportation of lepers and maintenance of the receiving station at Kalihi amounts to about $16,640 per annum.

The following table, showing the number of lepers at the settlement on Molokai, mortality, and the number on the books at the end of each year and estimated from the report of the board of health for the biennial period ended December 31, 1897, is given below:

Year.	Admissions.	Deaths.	Discharged or unaccounted for.	Number on the books December 31.
1864[a]	141	26	10	105
1867	70	25	7	143
1868	115	28	2	228
1869	126	59	11	284
1870	57	58	4	279
1871	183	51	9	402
1872	105	64	4	439
1873	487	156	21	749
1874	91	161	8	671
1875	212	163	14	706
1876	96	122	3	677
1877	163	129	1	710
1878	239	147	.....	802
1879	125	209	1	717
1880	51	152	10	606
1881	232	132	.....	706
1882	71	121	6	649
1883	301	150	15	785
1884	108	168	8	717
1885	103	142	26	655
1886	43	100	8	590
1887	220	108	4	698
1888	579	212	28	1,035
1889	308	149	7	1,187
1890	202	158	18	1,213
1891	143	212	2	1,142
1892	109	137	19	1,095
1893	211	151	.....	1,155
1894	128	155	3	1,124
1895	106	128	15	1,087
1896	146	116	2	1,115
1897	124	139	.....	1,100

[a] Settlement opened.

The following table, taken from the report of Dr. A. Moritz for 1866, shows the nationality, number, and sex received annually:

Table showing the nationality, number, and sex of lepers received annually at Molokai from 1866 to 1885.

Year.	Hawaiian.		Mixed Hawaiian.		White.		Chinese.		Other nationalities.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1866	101	38	.....	.....	.....	.....	2	.....	.....	.....	141
1867	56	12	.....	.....	1	.....	.....	.....	.....	[a]1	70
1868	72	37	2	2	1	.....	1	.....	.....	.....	115
1869	73	53	.....	.....	.....	.....	.....	.....	.....	.....	126
1870	31	26	.....	.....	.....	.....	.....	.....	.....	.....	57
1871	125	55	3	.....	.....	.....	.....	.....	.....	.....	183
1872	69	36	.....	.....	.....	.....	.....	.....	.....	.....	105
1873	289	191	2	1	.....	.....	3	.....	[b]1	.....	487
1874	51	37	1	1	1	.....	.....	.....	.....	.....	91
1875	121	82	2	2	3	.....	1	.....	[c]1	.....	212
1876	55	39	1	.....	1	.....	.....	.....	.....	.....	96
1877	107	53	2	.....	.....	.....	1	.....	.....	.....	163
1878	134	101	1	2	1	.....	.....	.....	.....	.....	239
1879	79	42	1	1	1	.....	1	.....	.....	.....	125
1880	31	17	2	.....	1	.....	.....	.....	.....	.....	51
1881	151	76	2	.....	2	.....	1	.....	.....	.....	232
1882	49	18	1	.....	1	.....	2	.....	.....	.....	71
1883	181	116	3	.....	.....	.....	1	.....	.....	.....	301
1884	60	37	3	.....	2	.....	6	.....	[d]1	.....	108
1885	68	28	2	.....	1	.....	3	.....	.....	.....	102
Total	1,903	1,094	28	9	16	.....	22	.....	3	1	3,075

[a] Roratongan. [b] Mauritius. [c] Manila. [d] Lascar.

The following table shows the number of persons sent to the Kalihi receiving station from the different Hawaiian islands for examination, and their pronounced condition, for the two years ended December 31, 1897; also the number sent to the leper settlement in the same period:

Examined during period 1895 to 1897.

From island of—	Lepers.	Suspicious.	Not lepers.	Total.
Oahu	71	50	20	141
Hawaii	100	5	2	107
Maui	40	14	3	57
Molokai	10	1	2	13
Kauai	29	2	2	33
At Kalihi, Dec. 31, 1895	19	.....	.....	19
Total	269	72	29	370

Sent to leper settlement during period 1895 to 1897.

Males	165
Females	91
Total	256

NATIONALITIES.

Hawaiian	225
Half-caste	15
Chinese	9
Portuguese	2
German	2

American	1
British	1
South Sea Islander	1
Total	256
Escaped from Kalihi	3
Sent to Japan	3
In Kalihi at this date	7
Total	269

Age of lepers sent during period December 31, 1895, to 1897.

Under 10 years	10
Ten to 20 years	92
Twenty to 30 years	51

Visit to Molokai.—On November 1, through the courtesy of the Hon. W. O. Smith, attorney-general and president of the board of health, I accompanied the board on its semiannual visit to the leper settlement. The steamer *Mezama* of the Interisland Steamship Company, which was chartered for the purpose, left Honolulu at 9.30 p. m. on the 11th and arrived at Kalaupapa at daylight next morning. A number of natives who were going to visit relatives at the settlement, by the permission of the board of health, were also on the steamer. The bold cliffs of the mountain range on Molokai stand out in severe lines as the steamer approaches, and nestling at the foot of the mountains on the spit of land is seen the leper settlement.

At a distance Kalaupapa looks like a prosperous little town, and in anticipation of the visit of the board of health a large number of the inhabitants had gathered at the landing place, some on foot and many mounted on horses. Some difficulty was experienced in landing, which is done by open boat, there being no docks or wharves, as there was a long northerly swell and the surf was somewhat dangerous. In the hands of natives skilled in surf boating this was soon accomplished without accident, and the entire party landed. After passing through the large crowd of lepers at the landing, and being warmly welcomed by a band of music composed of leper boys, we first visited the building set apart for the use of the board of health. Here different committees were organized for business and professional purposes. Headed by Dr. S. F. Alvarez a number of the medical men who accompanied the party secured horses and rode across to the old settlement of Kalawao, on the eastern side of the leper peninsula. Here were seen the different churches—Protestant, Catholic, and Mormon—including that built by Father Damien, and the grave of this leper martyr by the church side. The Baldwin Home for Leprous Boys was then visited, and the hospitals and cottages for the accommodation of lepers in various stages of the disease. The buildings are arranged around an open court in the form of a quadrangle, and the well-kept lawn, trees, and shrubbery make the place present quite a pleasing aspect.

The buildings are very neat and clean, everything was found in good order, and the management of Messrs. Dutton and Van Lil was much praised.

Many cases of leprosy were seen here, from the slight anæsthetic form affecting the ulnar and facial nerves to the most revolting types of ulcerating tubercular leprosy, and those who were sightless, paralyzed, bedridden, and almost moribund. Attached to the Baldwin Home is a system of baths which have rendered efficient service. Our time being limited, we returned to Kalaupapa, and after lunch, provided by the board and taken ashore from the steamer, the medical experts of the board, Drs. Wood, Emerson, Alvarez, and Myers, conducted an examination of a number of persons at the settlement. Some of these claimed that the disease had disappeared, and wished to return to their homes. A few children born in the settlement were also examined, and a number of kokaus, or helpers, who had resided at the settlement for years, and wished to know if they had contracted the disease. The clinic was very interesting, and many of the milder types of the disease were seen. In case of doubt the patient was ordered to the receiving station at Kalihi, near Honolulu, for further examination. The Bishop Home for Leprous Girls was then visited, and further examinations made here of a similar character to the others. The board having completed its business, the party boarded the steamer and returned to Honolulu.

Spread of the disease.—From 1849 to 1865 no measures were adopted by the Hawaiian authorities for the suppression of leprosy. The intimate living habits of the natives, using the same sleeping mats, cloth ing, pipes, eating from the same dishes, bad hygienic surroundings, and, above all, a tolerance of the leper—that is, he was treated as a member of the family, and never as an outcast—are given as some of the causes aiding in its spread.

In 1852–53 an epidemic of smallpox invaded the Hawaiian Islands, and over 5,000 died. Vaccination of the people resorted to during and subsequent to this epidemic is said to have aided in the dissemination of leprosy. The vaccinations, according to competent observers, were made from arm to arm, with humanized virus, and frequently the pulverized scab selected without much care. The vaccinations were done by planters, missionaries, and the natives, owing to the limited number of physicians available. The general opinion among leprologists is that vaccination had little to do with the spread of leprosy; that the disease was not common in those years, and that there was no marked increase in the number of cases, within the usual period of incubation, subsequent to the epidemic of smallpox.

During the residence of Dr. E. Arning here as a specialist to investigate leprosy for the Hawaiian Government an interesting experiment bearing on this subject was performed by him.

In 1885 he vaccinated a number of lepers. The vaccination took in 3 cases, 1 tubercular and 2 anæsthetic. Both the lymph and crust of the tubercular case contained the bacillus of leprosy, but he could not detect it in the anæsthetic cases. Nonhumanized virus has been used in the islands since 1888, and precludes the possibility of transmitting leprosy by vaccination.

During his residence here Dr. Arning also performed his now celebrated experiment bearing on the direct inoculation of leprosy. By consent of the Government and a condemned criminal named Kenan, whose sentence was commuted to imprisonment for life, Dr. Arning, on September 30, 1884, excised a leprous tubercle from the arm of a pronounced leper and transplanted it to the exterior surface of the left forearm of Kenan. He was confined and kept under daily observation for the four weeks following, and after that, once a week for several months, a microscopic examination of the inoculation spot being made each time. After this he was examined regularly once or twice a month. The microscope revealed the presence of the bacillus lepræ in large numbers until the middle of March, 1885. They then diminished in numbers, but were present in the scab fourteen months after inoculation. At this time there was nothing in his appearance indicative of leprosy. Pains in the elbow and wrist of the inoculated arm, which existed in 1885, four and five months after inoculation, soon disappeared. There was no marked change in the condition of Kenan until March, 1887 (two and a half years after inoculation). Dr. Brodie, the prison physician, then noticed changes in the right ear and coppery-looking spots on the right cheek. In December, 1887, he was examined by Dr. Arthur Moritz, and his description given as follows:

> General health good; no pain; slight unhealthy wound on palmar aspect of left index finger is the only abrasion of the skin. Covering the chest, arms, abdomen, and especially the back, is a copper-colored eruption raised above the surrounding skin and giving to the touch a distinct feeling of thickening. The size of the spots vary from a 10-cent piece to half a dollar, and present shapes round, oval, and serpiginous. The backs of the legs and thighs are affected, and on the front of the knees and thighs are serpiginous patches and small placques. The right cheek, forehead, and right ear are infiltered with leprous deposit. Eyebrows show no sign of diminution. The ulnar and external popliteal nerves are thickened. Kenan was afterwards removed to Molokai, and died there. This experiment of Dr. Arning was widely accepted as proof of the inoculability of leprosy, but Mr. R. W. Meyer, for many years superintendent of the settlement at Molokai, states that there were lepers in Kenan's family. His mother-in-law, Pulu, died of leprosy in July, 1891, and Kenan's own son, Josepha, was at the leper settlement long before Kenan himself became a leper, and died there in December, 1895. Kenan's nephew, David, a son of Kenan's sister, also died of leprosy at the settlement in July, 1890.

Other modes of communication.—Kissing, nose rubbing, cohabitation, reception of the secretions from lepers on abrasions of the surface of the skin or by inhalation, deglutition, or transmission by insects. In many of the tubercular cases and some of the anæsthetic variety,

the lips, cheeks, tongue, arches of the palate, and nose are the seat of numerous leprous ulcers, and it is claimed that they also exist in the intestines. The bacilli are readily given off from these ulcers, and it is said can be communicated when a suitable soil is presented, such as abrasions of the skin and mucous membrane, catarrhal conditions, etc.

The natives eat poi, or pai-ai, from the same dish with the fingers, and a leper in the circle with digital leprous ulcers might convey it to others.

The opinion prevails in Hawaii that the disease is not communicated by cohabitation with lepers, but leprologists admit that in the early stages of the disease, when it is not well defined on the surface of the body, leprous patches may be present on the genitals, and given an abrasion or suitable soil it is reasonable to infer that transmission in this manner is not impossible.

It is suspected that certain insects play a part in the transmission of leprosy, the common house fly, mosquito, and bedbug being the principal carriers of the infection. The house fly is now prominent as a disseminator of typhoid fever and septic affections, and it is not difficult to imagine that an active part can be taken by this insect in the spread of leprosy, particularly where they can pass from open leprous ulcers to other individuals who may present a suitable soil for the reception of the bacillus. I am not aware that any bacteriological investigations have been made in this manner relative to the house fly. The mosquito is also considered as the disseminator of certain diseases, and some light has been thrown on the influence it may have on the transmission of leprosy by Dr. L. F. Alvarez, the leprologist of the Hawaiian government. He allowed mosquitoes to alight on the open sores of lepers, and when they had feasted themselves they were captured and killed, and stained preparations made from their crushed bodies contained leprous bacilli in large numbers. Mosquitoes are present in the Hawaiian Islands throughout the entire year. Until the life history of the bacillus lepræ is worked out and isolated cultures obtained, the powers of resistance of the organism to external agencies will remain unknown, but it is believed to be very resistant, and it may exist in a spore condition in the soil, on clothing or other fomites, and on the surface of various articles.

In 1884 Dr. Arning made some experiments relative to the resisting powers of the bacillus of leprosy—

> Leprous tissue and matter were set aside under conditions of temperature and moisture conducive to thorough putrefaction, while the growth of the larger fungi was carefully excluded. Microscopical examinations were made from time to time and the bacillus lepræ was found to hold its own against the germs of dissolution and putrefaction of albuminous matter and was met with so abundantly and so laden with spores that the idea of actual increase suggested itself to him. Subsequent examinations showed that every vestige of the cellular and fibrous structure of the tissue had disappeared, even the bacteria of putrefaction had crumbled up into a mass of detritus, but the bacillus lapræ was there with all its peculiar microchemical reactions.

Prompted by this investigation the same observer went to Molokai and procured parts of a case of tubercular leprosy which had been buried three months and was in an advanced state of putrefaction. In this tissue the leprous bacilli were present in large numbers. Dr. L. F. Alvarez has lately made some interesting experiments bearing on the possible culture of the bacillus of leprosy. Up to the present bacteriologists taught that the bacilli of leprosy could be distinguished from many other bacilli by the fact that they were not decolorized by strong solutions of the mineral acids.

After many experiments he succeeded in demonstrating the existence of leprous bacilli, which are entirely decolorized when washed in solutions of 25 per cent of sulphuric or in 30 per cent of nitric acids. He states that he has never found the decolorized bacilli in old tubercles or ulcerating surfaces. They are found only in recent eruptions or new nodules, and are probably the young or active bacilli, while the bacilli which hold the stain are probably old and inert. He states that this discovery may serve to explain the many failures in producing pure cultures in artificial media. If the tubes are inoculated from old tubercles failure results, as the bacilli are dead or have lost their power of reproduction, and if he found colonies of bacilli in his tubes which did not stain he would probably throw them away. He also states that he has lately obtained growths of bacilli resembling those of leprosy in blood serum. They are decolorized by mineral acids, and the growth is almost invisible. The only sign of growth is a glazed appearance of the surface inoculated. They appear to grow only on the surface of the serum and do not form colonies. A mongoose inoculated with these bacilli showed slight paralysis of the hind legs and died in a few days, but the examination did not reveal the cause of death.

Immunity.—All persons are not susceptible to leprosy, and most of the white race seem to have a certain immunity; and if the disease can not be conveyed by cohabitation the white sailor seems secure. Many women have lived in intimate relation with leprous husbands, and husbands with leprous wives, and failed to contract the disease. A number of the kokuas, or helpers, on Molokai have lived among and associated with lepers for years and escaped.

Bearing on this question, Dr. A. Moritz gives the following:

> The washerwoman for the hospital at Kalawao has washed the soiled clothes of lepers, the worst cases, for seventeen years; she had lepers living in her house, and her two husbands were lepers for years before they died, and yet in spite of all this contact this woman is hale, hearty, and plump, and as fine a specimen of womanhood as any in the islands.

Such cases must possess a certain immunity which is wanting in others.

The native Hawaiian seems more susceptible to the disease than any other race at present on the islands, and a glance at the statistical tables already given will confirm this statement.

The population of the Hawaiian Islands, as given February 8, 1897, was as follows:

Nationality.	Males.	Females.	Total.
Hawaiian	16,399	14,620	31,019
Part-Hawaiian	4,249	4,236	8,485
American	1,975	1,111	3,086
British	1,406	844	2,250
German	866	566	1,432
French	56	45	101
Norwegian	216	162	378
Portuguese	8,202	6,989	15,191
Japanese	19,212	5,195	24,407
Chinese	19,167	2,449	21,616
South Sea Islanders	321	134	455
Other nationalities	448	152	600
Total	72,517	36,503	109,020

The present census of the leper settlement on Molokai, taken on November 11, 1898, is as follows:

Leper males, 634; leper females, 439; total, 1,073. Detail, Baldwin Home, boys, 141; detail, Bishop Home, girls, 130. Nonleprous children of leprous parents, male, 43; nonleprous children of leprous parents, female, 18; total, 61. Helpers (kokuas), nonleprous persons permitted by the board of health to live in the settlement and care for leprous relatives, etc., males, 37; females, 36; total, 73. Nonleprous priests, sisters, brothers, teachers, etc., 61; total of all persons at the settlement November 11, 1898, 1,207.

Heredity.—At one time much importance was attached to the theory of heredity in this place, but in the light of the present day it is considered an exploded theory. A person has only to visit the Kapiolani Home at Kilihi and see the healthy female children born in the settlement of leprous parents (one or both lepers) and ranging in age from 3 to 20 years, to be convinced that there is little in the theory of heredity. In contrast with this, and an additional argument in favor of contagion, is the fact that if these children, born of leprous parents, and without a blemish, be left with their parents and associate with lepers they contract the disease.

A home for boys born of leprous parents is now under consideration, and a small appropriation has been made by the government for that purpose. In connection with this subject, and in the absence of prohibitive measures relative to the cohabitation of lepers, those best informed here say that the fertility of lepers is not great, and that many of the progeny of such die in early childhood of diseases other than leprosy.

Prevailing types of the disease.—The two principal types seen here are the tubercular and anæsthetic, and sometimes a mixed form. The tubercular form is the most abundant and exceeds the anæsthetic variety by three or four to one. It is characterized by the presence of tubercles on the face and other parts of the body, infiltration of the

cheeks, nose, forehead, and lobes of the ears. The eyebrows are lost and the countenance assumes a leonine expression. There is thickening of the fingers and toes, swelling of the hands, feet, and limbs, and leprous patches on the chest, abdomen, back, and nates. It hardly ever attacks the scalp. In the anæsthetic variety the favorite points of attack are the facial, ulnar, and peroneal nerves. The nerve sheath is invaded by the bacilli, the trunk of the nerves is thickened and perceptibly enlarged. There may or may not be leprous patches on the body and possibly leprous ulcers in the mouth or nose, but these are more common and severe in the tubercular forms. Paralysis and wasting of muscles follow, and there are peculiar deformities of the hands and feet; palmar and planter ulcers often form. The anæsthetic type is slow in progress and may last for many years. In the severe forms of leprosy the fingers, toes, and even the limbs are lost, the eyes are destroyed, all of the viscera and tissues of the body are gradually invaded, and the leper dies a revolting mass of humanity. Skin diseases are very common among lepers here, and in the early stages interfere with the diagnosis.

Medical treatment.—The Hawaiian government, with a liberality which is deserving of high praise, has made every effort to employ different measures vaunted as cures for leprosy. Their own physicians have tried many remedies, and in 1883 Dr. Edward Arning, of Switzerland, was induced to come to Hawaii and serve the government as a specialist to investigate the subject of leprosy, He accomplished much in the line of investigation, but little relative to curative treatment. He resigned in 1889, and was succeeded in the same year by Dr. A. Lutz, of Sao Paulo, Brazil, a pupil of Dr. Unna, of Hamburg.

Under the influence of good food, improved hygienic surroundings, and treatment of a tonic nature, the disease improves and sometimes is arrested in a manner similar to cases of tuberculosis, but the tendency to relapse is great and the cases of aborted leprosy are not numerous. Among the medicinal remedies most valued are sodium salicylate, salol, creosote, gurgun and chalamoogra oils, pyrogallic acid, chrysarobin, ichtyol, lysol, and mercurials in cases associated with syphilis.

Dr. Alvarez has tried a bouillon prepared from a culture of the bacillus prodigiosus used as an injection once daily, beginning with 12 c. c. and increasing gradually until 80 c. c. were used.

This was tried in twelve leper boys brought from the settlement at Molokai, and the experiments extended over a period of three months. At the end of the period the boys were examined by the medical board and two of them declared free from leprosy and returned to their homes. Another showed marked improvement, but the condition of the others was not changed. He also tried thymus and thyroid glands extract and dry powder. The result was negative in the case of the thymus, but from the thyroid gland were satisfactory.

He has also tried the serum of Dr. Carrasquilla, of Bogota, Colombia. Temporary improvement in all and marked benefit in one case resulted, which continued for six weeks; "the tubercles which had covered his face, ears, and chest had, with very few exceptions, disappeared entirely." Baths of various kinds, including the Goto system, have also been tried. They are all beneficial, but not curative.

Dr. F. R. Day, port physician, and member of the Hawaiian board of health, who visited Japan in 1897, informs me that the Kusatsu Springs in that country have a beneficial and curative effect in leprosy. These waters contain the sulphates of aluminum, iron, calcium, magnesium, soda, and potash, and have a large percentage of free hydrochloric and sulphuric acids.

An imitation of the waters of these springs was tried here, but without any positive results. The moxa has also been used to destroy the tubercles, and with good results. The curative treatment of leprosy has up to the present yielded meager results. Hawaii presents a suitable field for the scientific study and investigation of leprosy.

Present outlook.—The Hawaiian authorities have accomplished much in their efforts to prevent the spread of leprosy in the face of the difficulties they have had to contend with, the principal of which has been the indifference and want of cooperation on the part of the native race, who are the most susceptible to the disease.

In the past segregation has been abhorrent to them; they do not fear leprosy, and cases are concealed from the authorities as long as possible. It has been stated to me, by one in a position to know, that in spite of the efforts to segregate lepers many are still at large on the different islands. Segregation has now been practiced, in a manner, since 1866, a period of thirty-two years, and should have produced more positive results in diminishing the number of cases.

The number of cases at Molokai at the present time shows no great diminution when compared with former years, but in explanation of this the authorities state that the large number is due to stricter methods of segregation observed since the fall of the monarchy, and that the number of cases at large is few compared with former years.

The humane and praiseworthy method of providing for the care of lepers at Molokai has made the place attractive to some of the natives, and it is said that many try to acquire the disease in order that they may live at Molokai, at the expense of the Government, for the rest of their days.

Stricter segregation is demanded, and intercourse between those unaffected and the settlement should be prohibited or allowed under more rigid methods of procedure, which would prohibit actual mingling with those diseased. Cohabitation with or between lepers should be prohibited. House to house inspection at proper intervals has never been practiced, and the buildings and effects of lepers have not

been disinfected or destroyed. Importation of races from endemic areas of leprosy should be conducted only under the most rigid system of inspection, restricted, or prohibited, and cremation of the bodies of the dead from leprosy should be practiced.

Precautions necessary to prevent the introduction of leprosy into the United States from the Hawaiian Islands.—The period of incubation in leprosy is so long and variable (from three to seven or ten years), its detection in the early stages so difficult, and the fact that leprous patches may first appear on the unexposed parts of the body, such as the upper parts of the arms, chest, back, and nates, and that leprous ulcers may be present in the upper part of the nasal passages, makes its detection by ordinary quarantine methods uncertain.

In pronounced cases detection is easy, but those rarely emigrate, and the greatest difficulty would be met with in the slight cases occurring in the white or mixed races.

The native Hawaiian rarely emigrates, and those who leave their homes generally go as sailors, although I have been informed that there is a small colony of Hawaiians in Salt Lake City, Utah, who were induced to go there by the Mormon missionaries. Inquiry as to the presence or absence of leprosy among them would be interesting.

It is possible for persons with leprosy undeveloped, and for the slighter cases, to pass from one country to another without detection, and the fact of its presence in various parts of the United States is evidence that quarantine restrictions do not exclude it.

Few medical men are familiar with the appearance of leprosy in its early stages, and cases are often diagnosed as other skin diseases, and the fact that skin diseases such as psoriasis, various forms of tænia, chloasma, scabies, erythema, etc., are often associated with leprosy makes its detection still more difficult.

Restrictive measures should be adopted to control the departure of all emigrants from endemic foci of leprosy at the point of departure, and these should consist of a careful inquiry into the family and sanitary history of each emigrant, a rigid physical examination and disinfection of his effects. Similar procedures at the port of arrival should be adopted and a record of the destination of the emigrant preserved.

Adoption of the above-named measures would restrict the importation of the disease so far as it is possible to do so, but such proceedings could be still further aided by the Government of the United States assuming control of measures for the suppression of leprosy in the possessions recently acquired by annexation and by conquest, viz, the Hawaiian and Philippine Islands and the island of Cuba, in all of which leprosy exists to a greater or less extent.

In so doing it would assume its share among the nations in stamping out this pest of ages, and would set an example which might, with undoubted benefit to the welfare of mankind, be emulated by the enlightened nations of the world.

I am indebted to the Hon. W. O. Smith, attorney-general of Hawaii, president of the board of health, the medical members, and the executive officer, Mr. C. B. Reynolds, for many favors.

[Report from United States public health reports, October 11, 1901.]

DESCRIPTION OF THE LEPER SETTLEMENT ON THE ISLAND OF MOLOKAI.

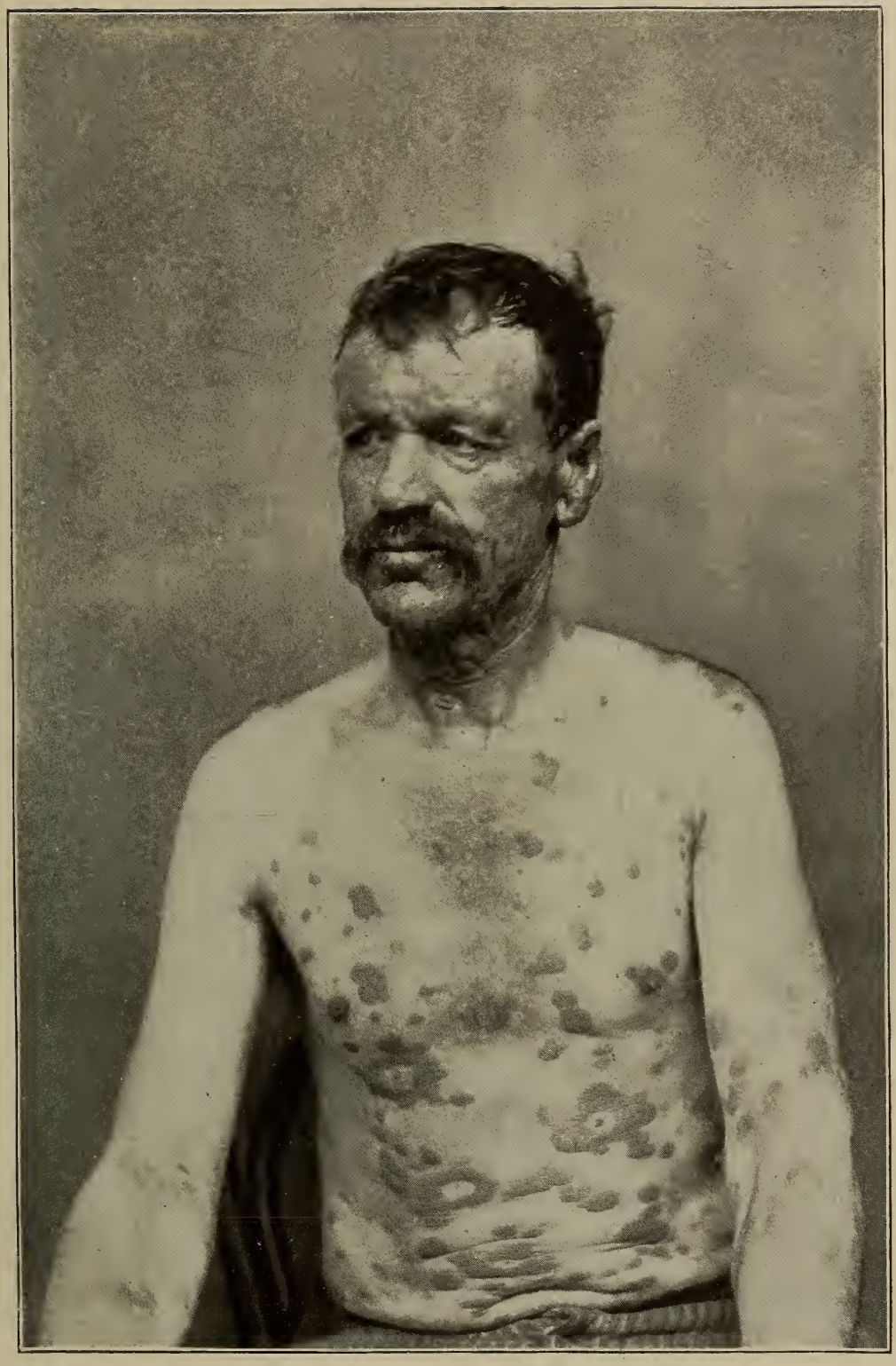
HONOLULU, H. I., *September 20, 1901.*

SIR: I have the honor to make the following report of my visit to the leper settlement on the island of Molokai:

This visit was made on the invitation of the Hawaiian Territorial board of health, the authority for leaving my station for this purpose having been granted by Bureau letter of June 12, 1901.

The board of health makes regularly an annual trip to the settlement, and as every detail for an easy and thorough inspection is arranged beforehand, one is able to see and learn more in a day in following them in their investigations than would be possible in a week under ordinary circumstances.

We left Honolulu at 9 p. m. of September 6, and arrived at Kalaupapa about 7 o'clock the following morning. The leper settlement is located upon, or may be said in a general way to comprise a tongue-shaped peninsula, which juts out into the ocean from about the center of the northern coast of Molokai. This tongue of land is shut off from the rest of the island by a mountain range which extends east and west along the northern coast, and which presents to the sea and also to the leper settlement a series of bold, precipitous, and rugged cliffs which rise to elevations varying from 1,800 to 3,000 feet. The steamer approaches the peninsula at a right angle, thereby giving the observer an excellent idea of the relation which it bears to the rest of the island. Indeed, the sight in the early morning is a very impressive one. As the sun rises the peninsula is thrown into a shadow and the lofty cliffs are brought into bold relief. The huge furrows on the face of the precipice soon come into view, causing one for the moment the vagary that it, too, has assumed a leonine countenance after its many years of vigil over the unfortunates below and against the escape of whom it has ever formed a most discouraging barrier. As the steamer draws nearer, the pretty little town of Kalaupapa comes into view. At a distance it looks like any prosperous little town, but when the anchor is dropped one is near enough to see the white cottages and churches, which are surrounded in most instances by stone or lava fences inclosing yards planted with tropical fruits and flowers. I was reminded of a summer resort I had seen somewhere. The shore is lined with large rocks, and, on account of the almost constant northerly swell, is rather dangerous to approach, even in a small boat,



No. 1. MACULAR LEPROSY.

No. 2. ANÆSTHETIC LEPROSY—LOSS OF FINGERS AND TOES.

No. 3. TUBERCULO-ANÆSTHETIC LEPROSY, SHOWING THE "LEONINE" COUNTENANCE.

which, by the way, is the only means of making a landing. There were at least 400 lepers, the greater part of them gaily dressed and decorated with flowers ("leis"), gathered at the landing to meet us. The leper band was playing, and things in general took on the appearance of a country fair.

The crowd had gathered both in anticipation of the visit of the board of health and to greet their friends and relatives who had made the trip with us. I was immediately struck by the fact that while I saw a number of distorted faces, indeed some even in a frightful condition, I did not see an unhappy one. I saw several lepers with their faces furrowed and distorted beyond recognition wearing white duck trousers and straw hats of the most modern shape, these latter adorned, as is almost inevitable in Hawaii, with "leis." Notwithstanding the incongruity of this combination of Hawaiian holiday dress and leprosy, one could not but admire the hopeful and cheerful way in which these poor people resigned themselves to their fate. Be it said to the credit of some one that such contentment can only thrive on a comfortable mode of life and good treatment.

The peninsula has an area of 8 square miles, being only a very small part of the island of Molokai, with its area of 261 square miles. I mention this because a great many have the impression that the whole of Molokai is given up to the segregation of lepers. The breadth of the base of the peninsula where it joins the cliffs is $2\frac{3}{4}$ miles; breadth at the center, $2\frac{1}{2}$; and length, 1 mile.

The soil is composed of disintegrated lava and sand, and with irrigation is very productive. The village of Kalaupapa is situated on the western shore not far removed from the face of the cliff, and on the eastern shore, similarly situated, is the town of Kalawao. Between these towns, but nearer to Kalaupapa than to Kalawao, is the extinct crater of Kahukoo. This rises to an elevation of 493 feet above the sea level, and is supposed to have formed during its period of activity the land on which the leper settlement now stands.

The village of Kalawao is exposed to the full force of the usually prevailing northeast trade winds, and on this account presents a rather bleak appearance. It is said that during the winter months the climate here is most unpleasant, being bleak, cold, and rainy.

Kalaupapa, on the other hand, is protected by the crator of Kahukoo, and being further removed from the mountains, has the benefit of the sun's rays. The tropical vegetation and the abundance of grass here show the good climatic advantages which this place possesses.

About 600 lepers live in Kalaupapa, and probably one-third of this number in Kalawao. They have, however, taken up their houses here and there throughout the peninsula, giving to the latter in general the appearance of an eastern suburban town.

A great many of the lepers have saddle horses, and some of them very good ones. The board of health hired enough of them to mount the whole party, and we were soon on our tour of inspection. Our first trip was to Waikolu Valley, where the board of health taro patches are located. On account of the scarcity of taro throughout the islands the board of health has undertaken its cultivation for the lepers since 1897. This is done under the supervision of Mr. Reynolds, the superintendent of the settlement, and the labor is performed by the lepers, who are paid for this at current rates.

From this valley comes the water supply for the whole settlement. From springs in the mountain side an 8-inch pipe carries at the present time 1,500,000 gallons of water daily. It is said that the development of ten times this quantity would be possible. The party next visited the town of Kalawao. I do not believe I ever took a horseback ride affording such a variety of scenery in such a short space of time. The trip across from Kalaupapa to Kalawao was not unlike a trip across the rolling country of Virginia, but suddenly, with little warning, we were in a narrow bridle bath with the waves dashing at the horses' feet on one side and on the other our elbows touching the absolutely perpendicular precipice rising nearly 3,000 feet.

Grand as the sight was, it is said that after a rain storm, when the sides of the cliff have numerous cascades shooting from them into the space below, the effect is much finer. The scenery suddenly changes when the Waikolu Valley is entered. This gorge, which is shut in on three sides by towering ramparts of rock, with its floor of green taro, terraced upward and backward almost as far as the eye can reach, is one of the finest sights I have ever seen.

The town of Kalawao was next inspected. Here is located the church built by Father Damien, who, in the year 1873, gave his life to the lepers. The grave of this great good man is also here. The appearance of the town in general was very good. The houses were not so good as those in Kalaupapa, and perhaps showed their age more, yet they did not show neglect, and the extreme neatness of their yards and the roads in front of them was remarkable, calling forth from the inspecting party many words of praise for the superintendent of the settlement, Mr. Reynolds. The Baldwin Home, for leper boys, was next visited. This is run under the supervision of Brother Dutton, and has at this writing 112 inmates. Here among these boys we saw leprosy in all of its forms and in almost every stage, from the slight fullness between the eyes to the marked types of furrowed or leonine faces, with ear lobes elongated and ulcerating surfaces, and from the slightest anæsthetic forms, affecting perhaps only the ulnar nerve, to the most revolting mutilations. The leper boys have organized a band, and they played a number of selections for us. They were

dressed in very neat uniforms, and played, I thought, marvelously well.

There were several well-advanced cases of tubercular leprosy among them, and it was plain that this band would soon lose at least two of its members on account of the mutilation which their disease causes. This fact made their entertainment a rather pathetic one. We visited the bathrooms used in connection with the Goto treatment, which, by the way, I was informed was the only treatment regularly carried out at the settlement. The patients are bathed two or three times daily in warm water, of a temperature from 90° to 100° F. An infusion of a few ounces of hichiyoo bark, together with a certain proportion of taifunshi and sulphur, is placed in each bath. In connection with the bath certain remedial agents are used internally. These are given in the form of a tea and also of a pill. Their nature is unknown. I was told that by promoting cleanliness and free perspiration the Goto baths were beneficial.

The party now returned to Kalaupapa and visited the Bishop Home for leper girls. This is managed by the Catholic sisters, and has at this writing 109 inmates. The institution presented a particularly neat and well-kept appearance. The wards were nicely kept and the patients seemed very comfortable. I did not notice very many advanced cases of leprosy, except in the hospital, where there were several presenting the most marked deformities, and apparently in an almost moribund state. In one case the nose had been completely absorbed. I noticed here one leper mother with a nonleprous child. I was informed that there were 78 such children in the settlement. The board of health transfers to the Kapiolani Home, in Honolulu, the nonleprous children of lepers, provided the consent of the parents is given.

The board of health has just inaugurated a new system for preventing the lepers and their relatives and friends from embracing and kissing each other during this annual visit. It consists in marching the visitors immediately from the steamer landing to a corral with a double fence. The friends are compelled to remain inside this inclosure, and the lepers are allowed to gather around and talk to them through the bars. As there is little use in sending lepers to Molokai if their friends are to be allowed to visit and establish with them the intercourse referred to above, this measure must appeal even to the lay mind as being one absolutely necessary for the protection of the community at large. While before visitors were allowed to go to Molokai only once a year, under the corral system they are allowed to visit their unfortunate friends and relatives at any time.

A new home, the Sea View House, has been recently built at Kalaupapa for the helpless lepers. This is a very substantial, not to

say somewhat imposing, structure. There are 26 inmates here, who are cared for and fed by the steward in charge and his assistants.

At noon the party repaired to the superintendent's home, where the board of health had provided luncheon. The house is large and spacious and is surrounded by well-kept grounds. No lepers are ever allowed within this inclosure. Over 300 lepers had assembled in front of the gate of this place by the time luncheon was over, and the visiting party were given a concert by the Kalaupapa band and Kalaupapa quintette. After this was over the president of the board of health announced that he was ready to listen to any complaints or petitions which the assembled crowd had to lay before him. The grievances proved to be remarkably few in number and either trivial or unreasonable in nature. The board of health store was then visited. This is kept by a leper, an employee of the board, and is not unlike the average country store of the better class. The receipts in 1900 amounted to $12,411.45. As the necessities of life, including clothes, are furnished free to every leper, the output of this amount of money yearly seems remarkable, and shows that even if hope is being deferred the leper is in some ways as susceptible to the foibles and vanities of life as are any of us.

There were 909 lepers and 164 clean persons at the settlement at the time of our visit. Of the clean persons, 67 were kokuas or helpers—i. e., persons who feed and take care of helpless lepers—19 were in the administrative department, including the superintendent, his assistant, the Catholic brothers and sisters, and servants, and 78 were nonleprous children of lepers. I inquired particularly into the chances of the infection of these clean people with leprosy while in the discharge of their various duties. The general opinion was that in time they would become lepers.

It was not possible to obtain any statistics on this point as these clean people are coming and going all of the time. I was informed, however, that in the last ten years only ten clean residents have become lepers, and that at the present time there were no lepers at the settlement belonging to this class. The precautions of certain members of the visiting party prior to landing, together with the absolute lack of precaution on the part of others, attracted my attention. Not believing it to be wise to spend the day handling persons surely, and things almost surely, infected with leprosy, and knowing that from the amount of horseback riding that would be done the chances of new abrasions on the hands would be increased, I drew on a pair of gloves, and I noticed about one-third of the party doing the same thing.

I noticed that several men whom I knew would be exposed, especially during the day, did not wear gloves. On asking them why they went with bare hands, they stated that the risk for them was small,

but that we with gloves were apt to forget and rub our noses or eyes without removing our gloves, while they were being reminded continually of their infected bare hands. I mention this to show that while the relatively small number of cases of leprosy among the white population in the Hawaiian Islands must prove in a measure that to this class of persons the disease is only mildly contagious, the fear that some members of our party had of even touching their noses or eyes with infected gloves demonstrated how little is actually known of the contagiousness of this disease from a practical point of view; this, too, on the part of persons who have been handling leprosy for the past fifteen or twenty years.

The results of known exposure to leprosy are interesting, and show an uncertainty as to the chances of individual infection which to my mind make this disease one of the most difficult to operate against. For instance, I saw a leper at the settlement, a white man, whose face was already markedly infiltrated, who claims to have received his infection from a hoe which he took for a moment from the hands of a native who was cleaning up his yard, which man he saw at once was a leper. He was a carpenter by trade, and always had a certain number of abrasions on his hands. He developed leprosy shortly after this occurrence. On the other hand, there is said to be a man on the island of Maui who lived fifteen years with his leper wife and had 14 children by her, neither he nor the children ever developing leprosy. Women are said to be less liable to the disease, there being many cases of women having two or three husbands, and these latter, although previously clean, falling victims to leprosy, the women remaining clean until after the menopause, when the disease, supposed by some to have been in the meanwhile dormant, showed itself.

As an example of the length of time which a person may spend in intimate contact with leprosy without acquiring it, the history of the leper martyr, Father Damien, is very interesting:

Father Damien, a Belgian of good physique, age 34 years, arrived at the settlement in 1873. He was perfectly well until 1884, when pains in the left foot were complained of. Believing it to be only rheumatism he consulted Dr. Arning, who diagnosed it at once as leprosy. It was six months afterwards before the disease became manifest. In the latter part of 1885 a tubercle appeared on the lobe of the ear, and subsequently the infiltration of the forehead and cheeks began, together with the loss of the eyebrows. Thus the clinical picture was complete. I was informed by Mr. Reynolds, the superintendent, that the disease shows a much slower advance in those persons who perform manual labor or else take regular exercise. In this it shows a slight analogy to tuberculosis. The varieties of leprosy, tubercular and anæsthetic, are said to exist at the settlement in about equal number.

It is said that cases of tubercular and anæsthetic leprosy rarely occur in the same family. The three oldest patients now at the settlement arrived in the years 1874, 1875, and 1879, respectively.

I saw the one who arrived in 1875, and was surprised at the relatively slow advancement of the disease in his case.

The number of commitments to the settlement each year has gradually decreased during the past ten years. The following shows these transactions for the time stated:

Commitments: 1891, 132; 1892, 101; 1893, 211; 1894, 138; 1895, 106; 1896, 143; 1897, 122; 1898, 81; 1899, 61; 1900, 85.

It has been contended by some that even the number sent up during the past three years, while relatively smaller than the number for the preceding years, was larger than it should be, if one was to believe that leprosy was decreasing, a result promised when the Molokai settlement was first established. The facts show that the hunt throughout the islands for lepers has never before been carried on with as much vigor as it is now, and that the decrease in the annual number of commitments is the greatest proof of the fact that the disease is decreasing.

I noticed a great many lepers wearing glasses, and I saw several totally blind. I was told that the eyes were affected in nearly 10 per cent of the cases. In some cases the blindness was caused by a simple invasion of the optic nerve. In others the process had spread into the anterior chamber from the conjunctiva.

I noticed a peculiar hoarseness that several of the very sick lepers had, but the disgusting smell that I had heard so much about I found no worse than that found in almost any almshouse, however well kept it might be. It is said that those patients having leprous ulcerations in the nose give off a most horrible smell, unless they receive very active local treatment with antiseptics.

The leprous ulceration found in the bowels is believed to be caused by swallowing the pus secreted from these nasal sores. Dr. Pratt, the executive officer of the board of health, told me of a case which had lately arrived at the settlement in which skin taken from several localities showing the leprous process had failed to show the bacilli, while the latter were demonstrated at once in the nasal secretion.

A great many observers believe that infection from leprosy takes place most frequently through the inhalation of dust. The fact that in the past ten years only 10 clean persons have been infected at Molokai, notwithstanding the amount of dust that is constantly present all over the settlement, does not add weight to the inhalation theory, even though we assume that these 10 infections were caused in this way alone.

The cost of maintaining the settlement is much less than would be naturally expected. The general expenses are itemized as follows:

Board and cartage for lepers	$1,500
Medical examinations	1,000
Freight and passage	18,000
Kalihi Station expenses	12,000
Baldwin Home expenses	6,000
Bishop Home expenses	2,000
Lumber and building materials	6,000
Incidentals	3,000
Medicines	10,000
Beef and cattle	46,000
Poi	26,000
Bread	8,000
Rice	8,000
Flour and other supplies	12,500
Total	160,000

In other words, nearly 1,100 persons are housed, fed, clothed, and governed for $160,000 for two years, or for $80,000 a year.

That this is a relatively small amount on which to operate such a settlement anyone will admit. That an additional 1,000 lepers could be placed there and kept at a far smaller relative cost was a fact that was also apparent.

The number of lepers the place is capable of accommodating is practically without limit, and it occurred to me more than once that a site so suitable and isolated should be made more use of—that is, made our national leper sanitarium.

At 5 p. m. the inspection was over and we returned to the vessel. The band played us off, and the same crowd was assembled at the landing, some of them giving the native wail to their departing friends. We were soon on board the steamer and on our way home. I have to thank President H. C. Sloggett and other members of the board of health, including Dr. Pratt, the executive officer, for very many courtesies and much information while on this trip.

I arrived in Honolulu about 11 p. m. of September 7, and was on duty as usual the next morning.

Respectfully,

L. E. Cofer,
Passed Assistant Surgeon, U. S. M. H. S.,
Chief Quarantine Officer, Hawaiian Islands.

The Surgeon-General Marine-Hospital Service.

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